

SIO NO 878

17

KEY

33123

NODC NO 14891

CARD  
NO

17

GCT

2033

DATE

III-18-67

VESSEL SHEARWATER

LAT 33°18' N LONG 123°00' W DEPTH 2480 SPD

SURF T 58.0 B WIND D 33 F 12 DRY T 57.0 WET T 56.0

BAR 23 WEA 1 CL T 3 C 8 VIS SEA 05'

SWELL DIR

HT

PER

TCS

0'B

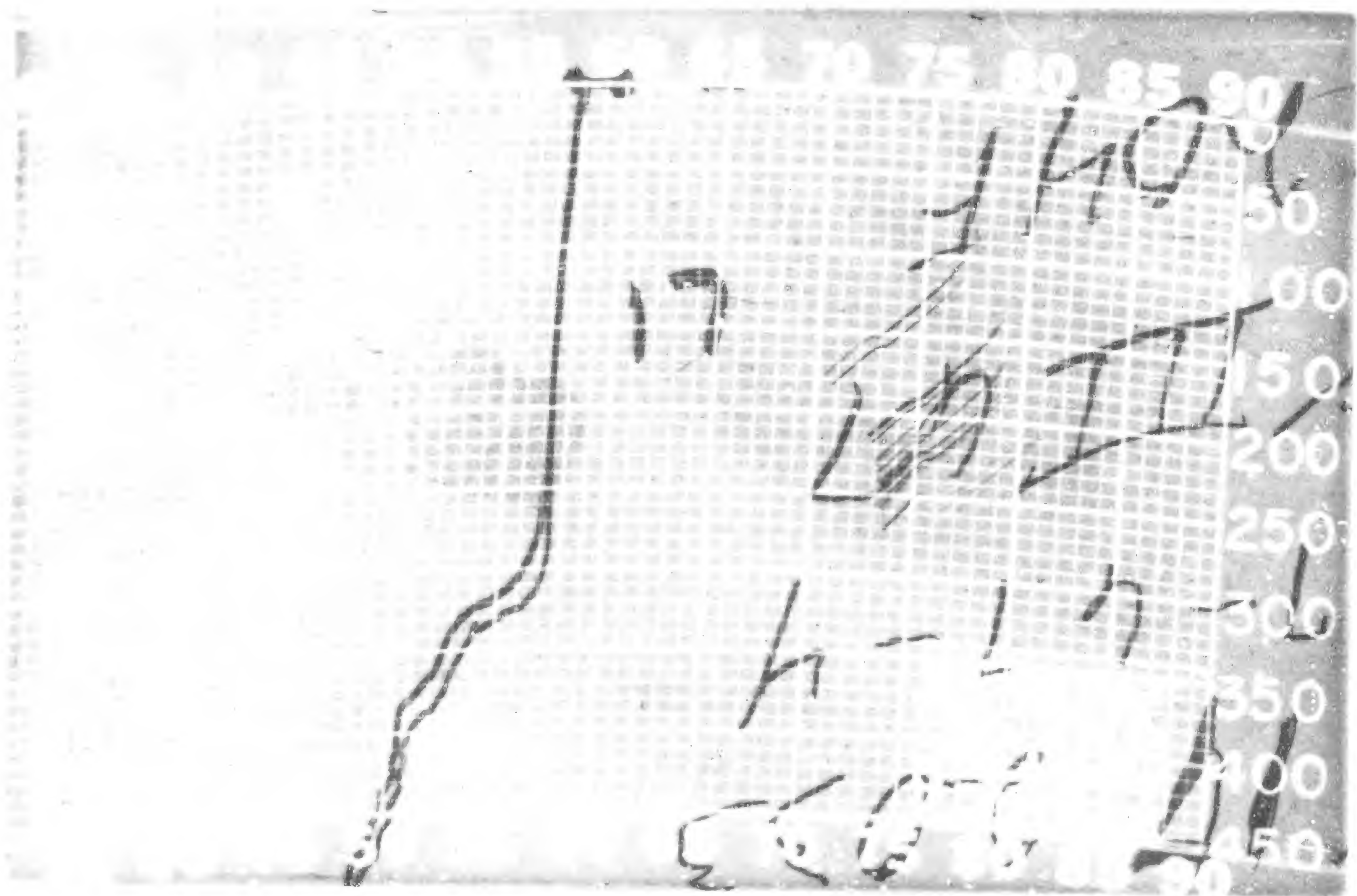
DCS

-10'

MAY 26 1967

VMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

18

KEY

33123

NODC NO 14891

CARD  
NO

18

GCT 0003

DATE III-19-67

VESSEL SHEARWATER

LAT 33°18' N LONG 123°45' W

DEPTH 2560 SPD

SURF T 58.5 B WIND D 34 F 12 DRY T 60.0 WET T 58.0

BAR 23 WEA 1 CL T 8 C 2 VIS SEA 07'

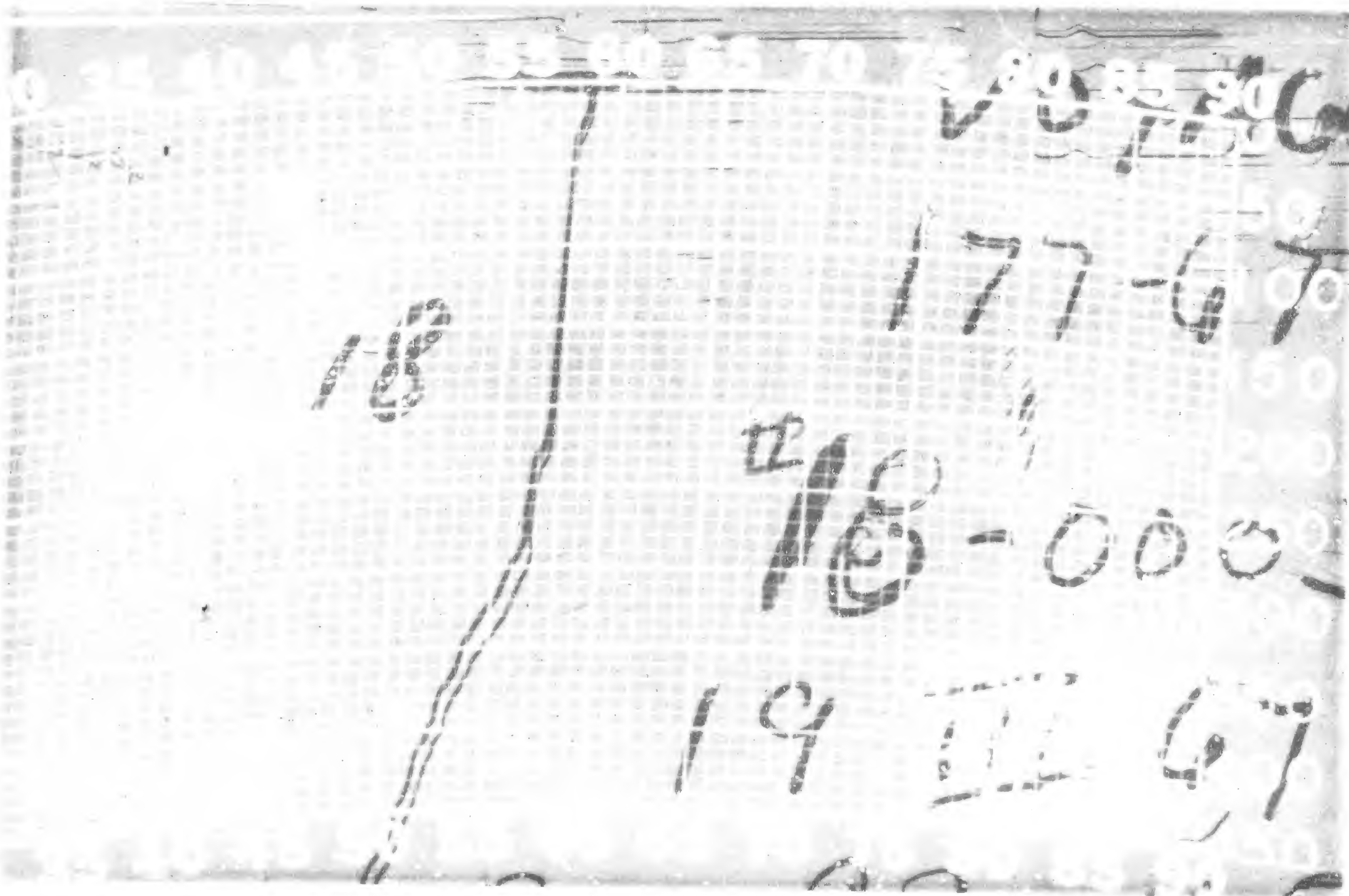
SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

19

KEY

33124

NODC NO 14891

CARD  
NO

19

GCT 0424

DATE III-19-67

VESSEL SHEARWATER

LAT 33°18' N LONG 124°35' W DEPTH 2640 SPD

SURF T 59.0 B WIND D 35 F 12 DRY T 57.0 WET T 54.0

BAR 23 WEA 1 CL T 6 C 3 VIS SEA 08'

SWELL DIR

HT

PER

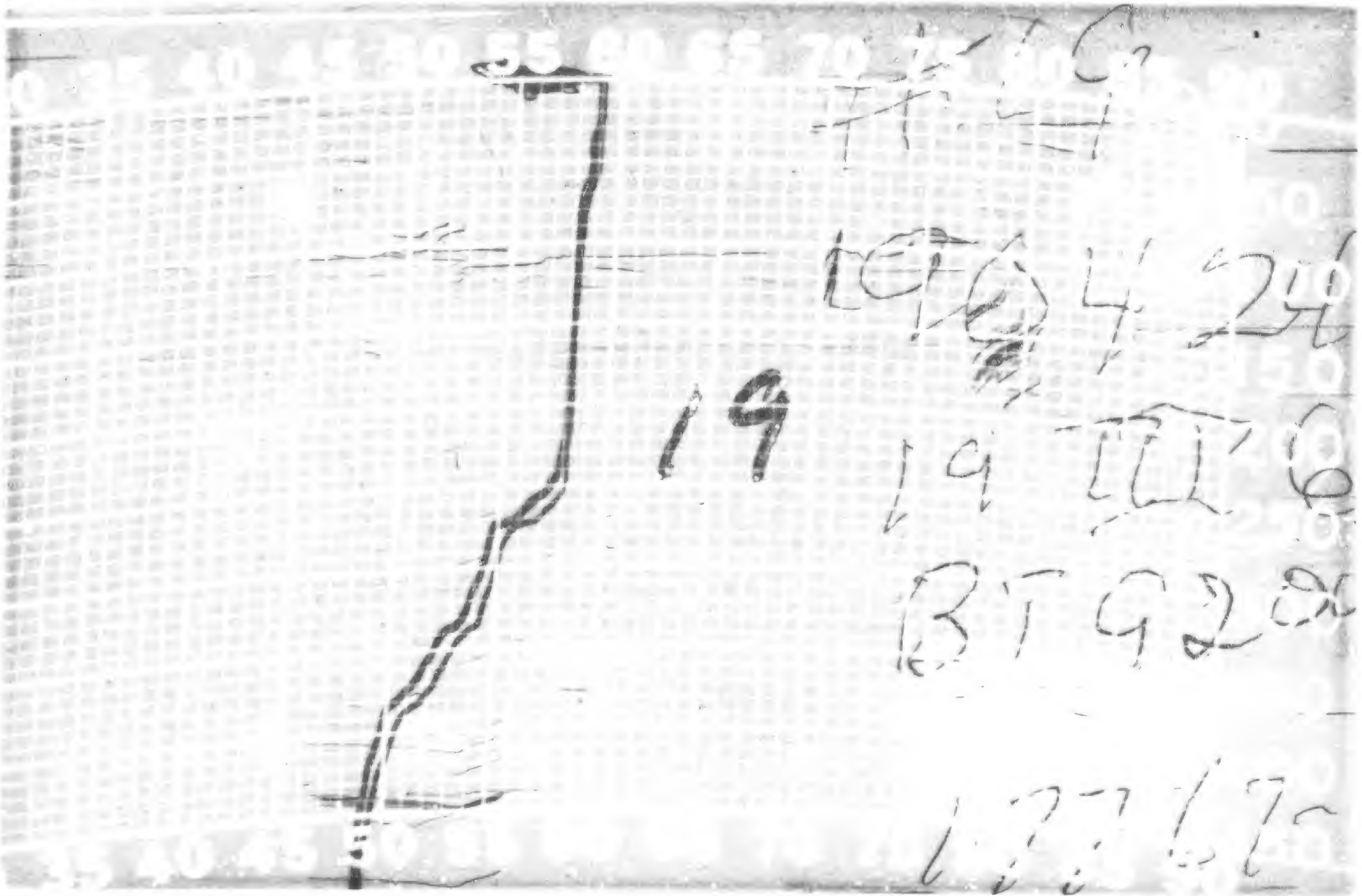
TCS 0'B

DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1955) Scripps Institution of Oceanography





SIO NO 878

20

KEY

33125

NODC NO 14891 CARD NO

20

GCT 0802

DATE III-19-67

VESSEL SHEARWATER

LAT 33°18' N LONG 125°24' W DEPTH 2560 SPD

SURF T WIND D 35 F 12 DRY T 57.0 WET T 54.0

BAR 25 WEA 1 CL T 7 C 3 VIS SEA 06'

SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

21

KEY

33126

NODC NO 14891 CARD NO 21

GCT 1205

DATE III-19-67

VESSEL SHEARWATER

LAT 33°18' N LONG 126°14' W DEPTH 2640 SPD

SURF T 58.5 B WIND D 30 F 14 DRY T 58.0 WET T 58.0

BAR 24 WEA 1 CL T 7 C 6 VIS SEA 10'

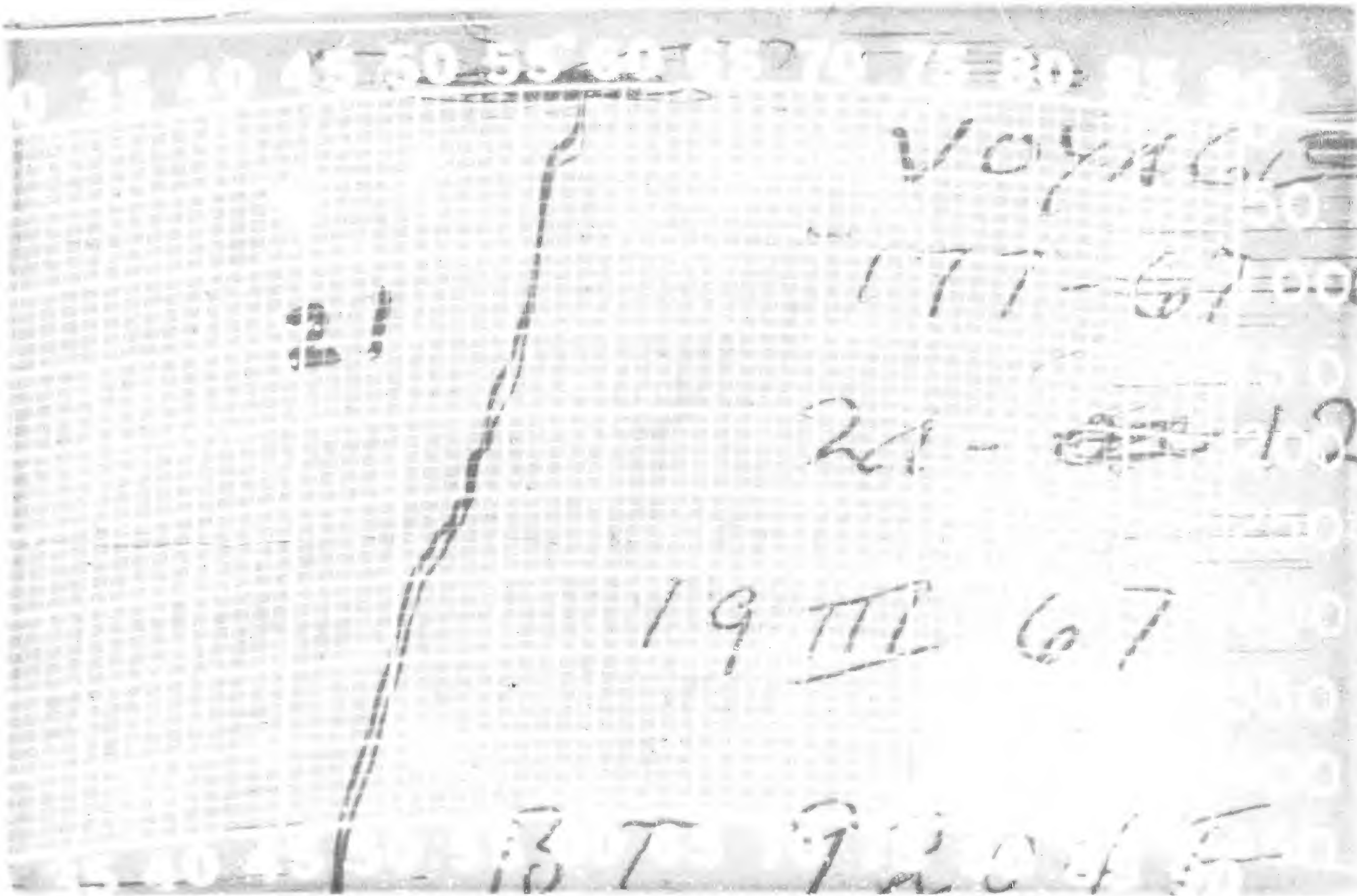
SWELL DIR HT PER

TCS 0°B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 22 KEY 32126  
NODC NO 14891 CARD NO 22 GCT 1627 DATE III-19-67  
VESSEL SHEARWATER  
LAT 32°37' N LONG 126°25' W DEPTH 2400 SPD  
SURF T 59.0 B WIND D 35 F 04 DRY T 56.5 WET T 54.0  
BAR 25 WEA 2 CL T 8 C 8 VIS SEA 00'  
SWELL DIR HT PER  
TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 23 KEY 32125  
NODC NO 14891 CARD NO 23 GCT 2050 DATE III - 19-67

VESSEL SHEARWATER

LAT 32° 35' N LONG 125° 46' W DEPTH 2313 SPD

SURF T 59.0 B WIND D 34 F 03 DRY T 66.0 WET T 58.0

BAR 26 WEA 1 CL T 8 C 7 VIS SEA 02'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

VMO Codes Used

CODE GIVEN IN US NAVY HC PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

24

KEY

32125

NODC NO 14891 CARD NO

24

GCT 0021

DATE III - 20 - 67

VESSEL SHEARWATER

LAT 32° 35' N LONG 125° 10' W DEPTH 2320 SPD

SURF T 59.5 B WIND D 28 F 08 DRY T 64.0 WET T 62.0

BAR 25 WEA 1 CL T 0 C 4 VIS SEA 04'

SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 25 KEY 32124  
NODC NO 14891 CARD NO 25 GCT 0430 DATE III-20-67

VESSEL SHEARWATER

LAT 32°32' N LONG 124°22' W DEPTH 2560 SPD

SURF T 58.5 B WIND D 27 F 10 DRY T 59.0 WET T 55.0

BAR 26 WEA 1 CL T 8 C 3 VIS SEA 01'

SWELL DIR HT PER

TCS 0.3 DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



25

4th 25

20 Oct 50

20 Dec 50

BT 920

17-07



SIO NO 878

26

KEY

32123

NODC NO 14891 CARD NO 26

GCT 0812

DATE III-20-67

VESSEL SHEARWATER

LAT 32°31' N LONG 123°27' W DEPTH 2245 SPD

SURF T 59.0 B WIND D 27 F 10 DRY T 58.0 WET T 55.0

BAR 26 WEA 1 CL T 6 C 2 VIS SEA 01'

SWELL DIR

HT

PER

TCS

0°B

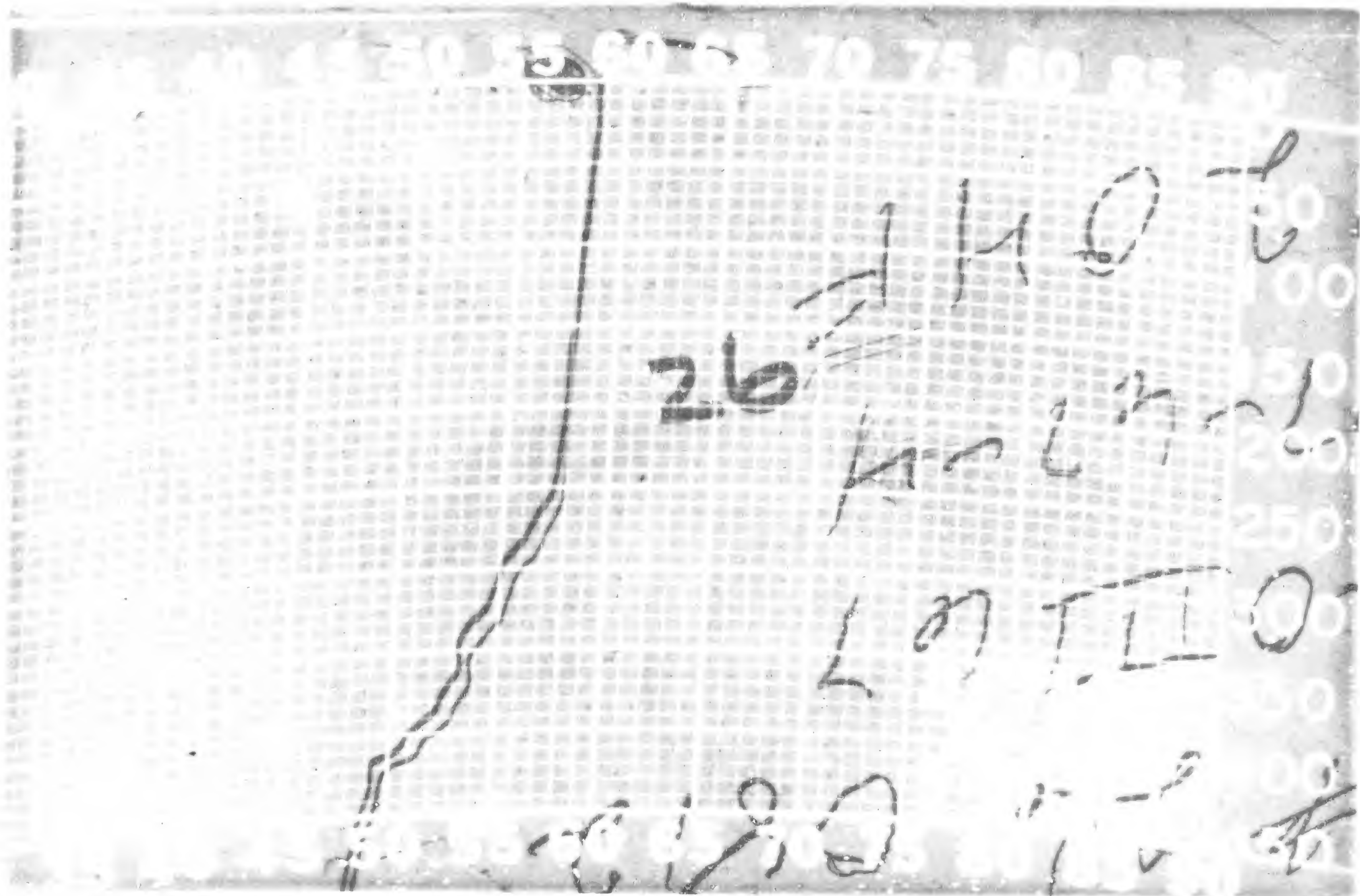
DCS

-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





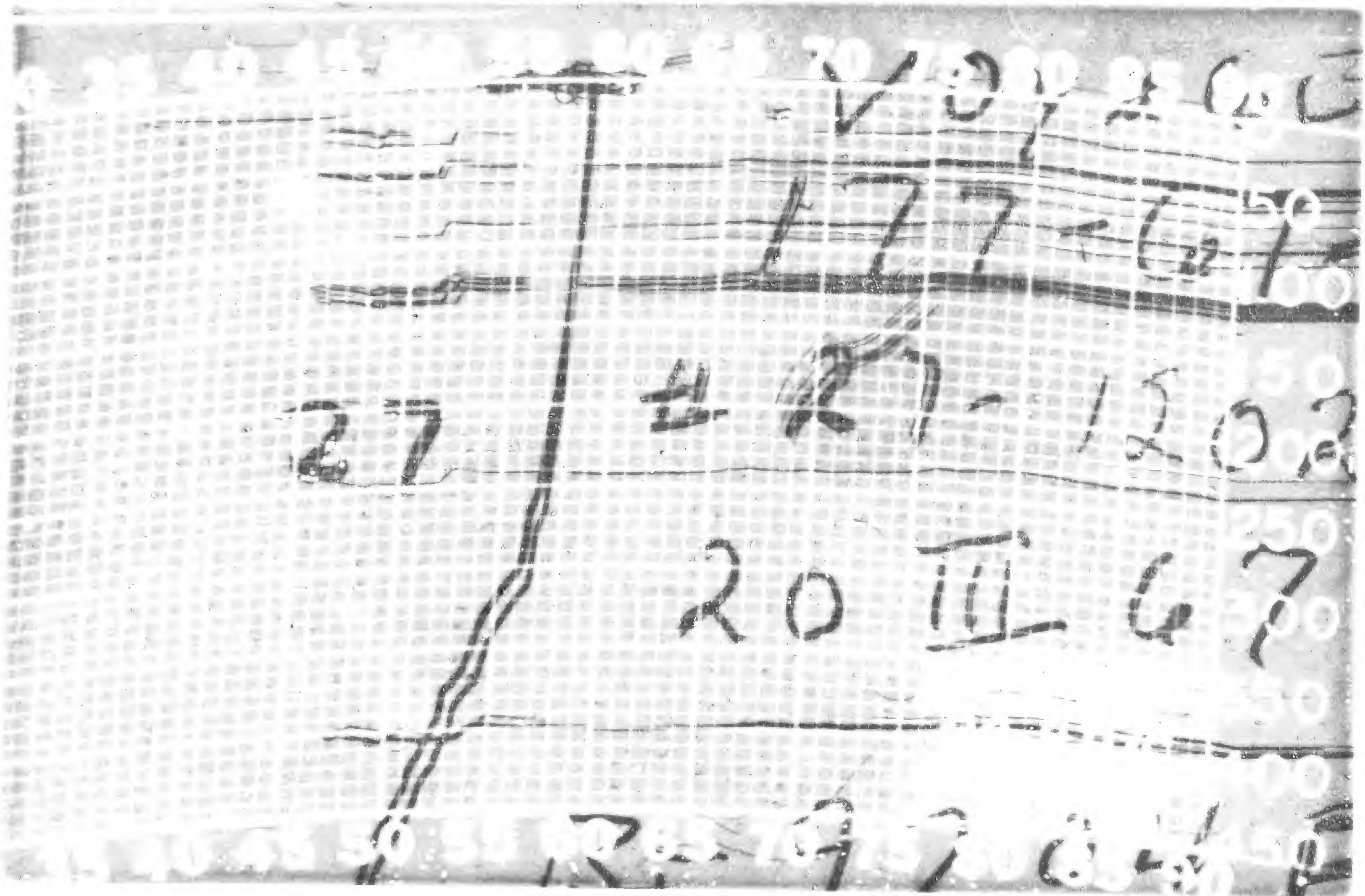
SIO NO 878 27 KEY 32122  
NODC NO 14891 CARD NO 27 GCT 1202 DATE III-20-67  
VESSEL SHEARWATER  
LAT 32°29' N LONG 122°49' W DEPTH 2032 SPD  
SURF T WIND D 30 F 10 DRY T 58.0 WET T 56.0  
BAR 25 WEA 1 CL T 6 C 3 VIS SEA 03'  
SWELL DIR HT PER  
TCS 0°B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 878

1

KEY

34121

NODC NO 14891

CARD  
NO

/

GCT

2045

DATE

III-12-67

VESSEL SHEARWATER

LAT 34057' N

LONG

121056' W

DEPTH

1670

SPD

SURF T 55.0B

WIND D

21

F

18

DRY T

63.0

WET T

59.0

BAR

14

WEA

5

CL T

6

C

8

VIS

SEA

07'

SWELL DIR

HT

PER

TCS

0.3

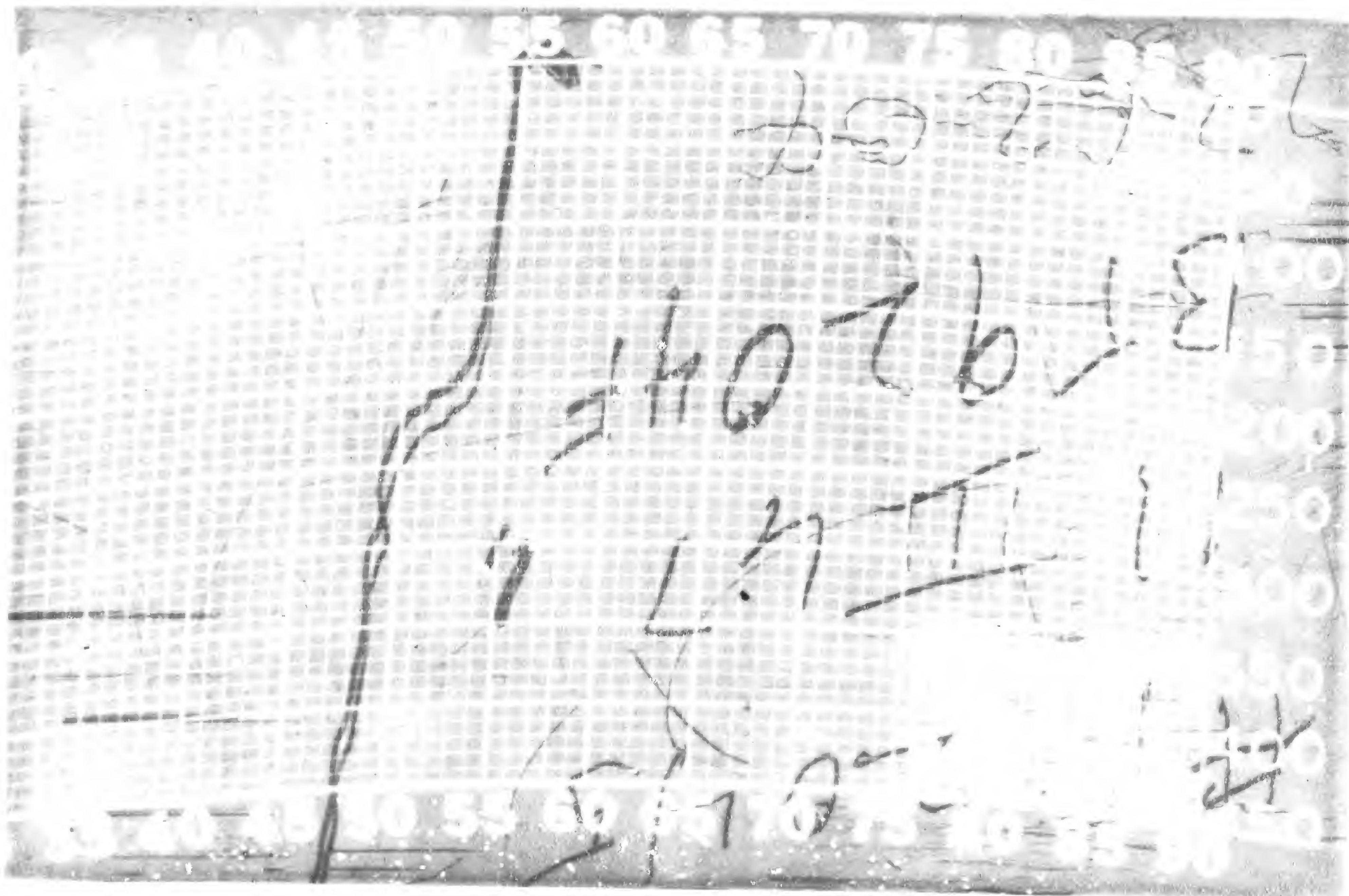
DCS

-10'

MAY 2 F 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

2

KEY

35122

NODC NO 14891

CARD  
NO

2

GCT

0005

DATE

III-13-67

VESSEL SHEERWATER

LAT 35° 00' N LONG 122° 27' W DEPTH 2100 SPD

SURF T 55.03 WIND D 22 F 18 DRY T 58.0 WET T 56.0

BAR 13 WEA 8 CL T 9 C 7 VIS SEA 12'

SWELL DIR HT PER

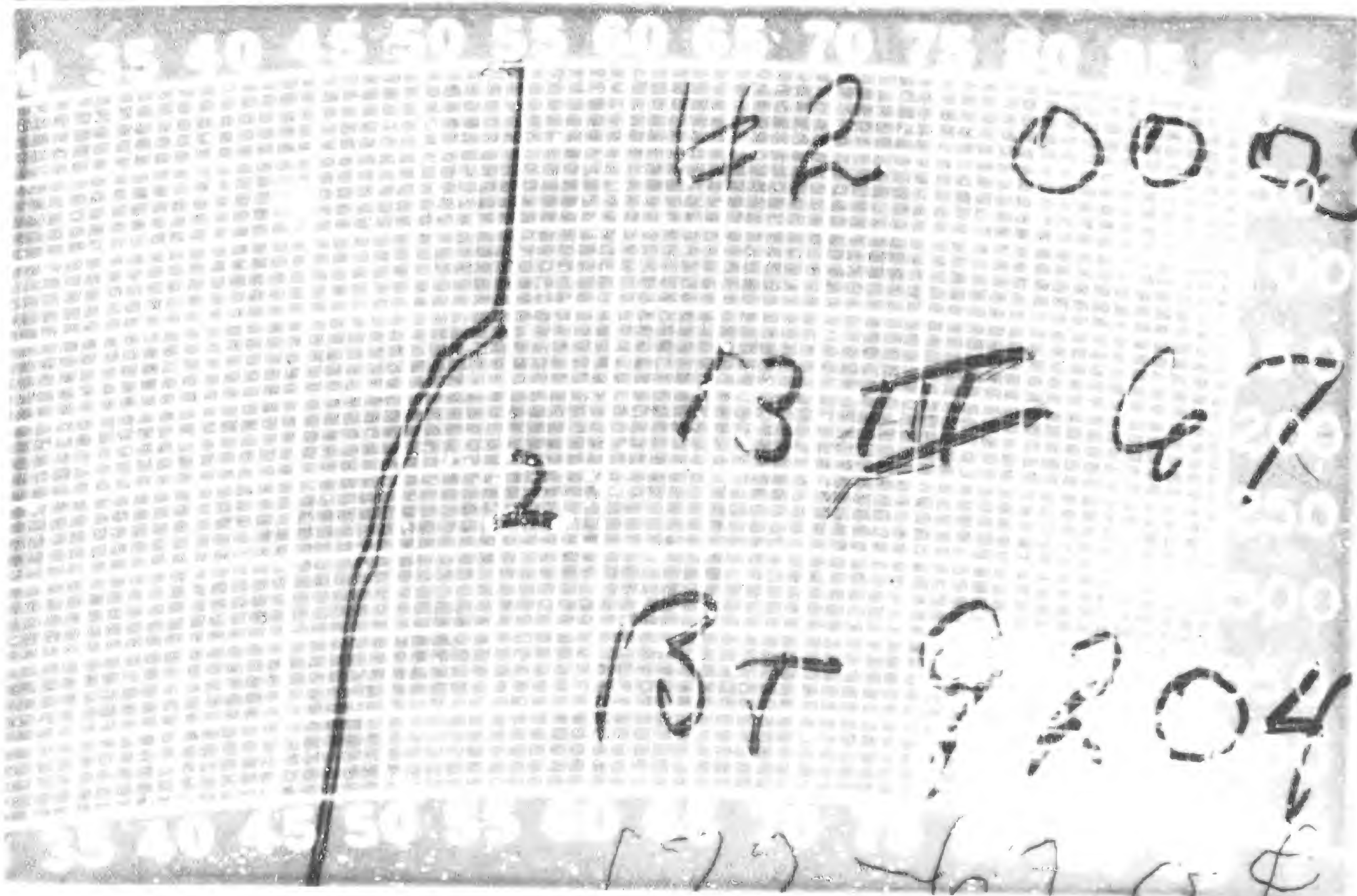
TCS 0.8 DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HC PUBL 606c (REV 1956) Scripps Institution of Oceanography





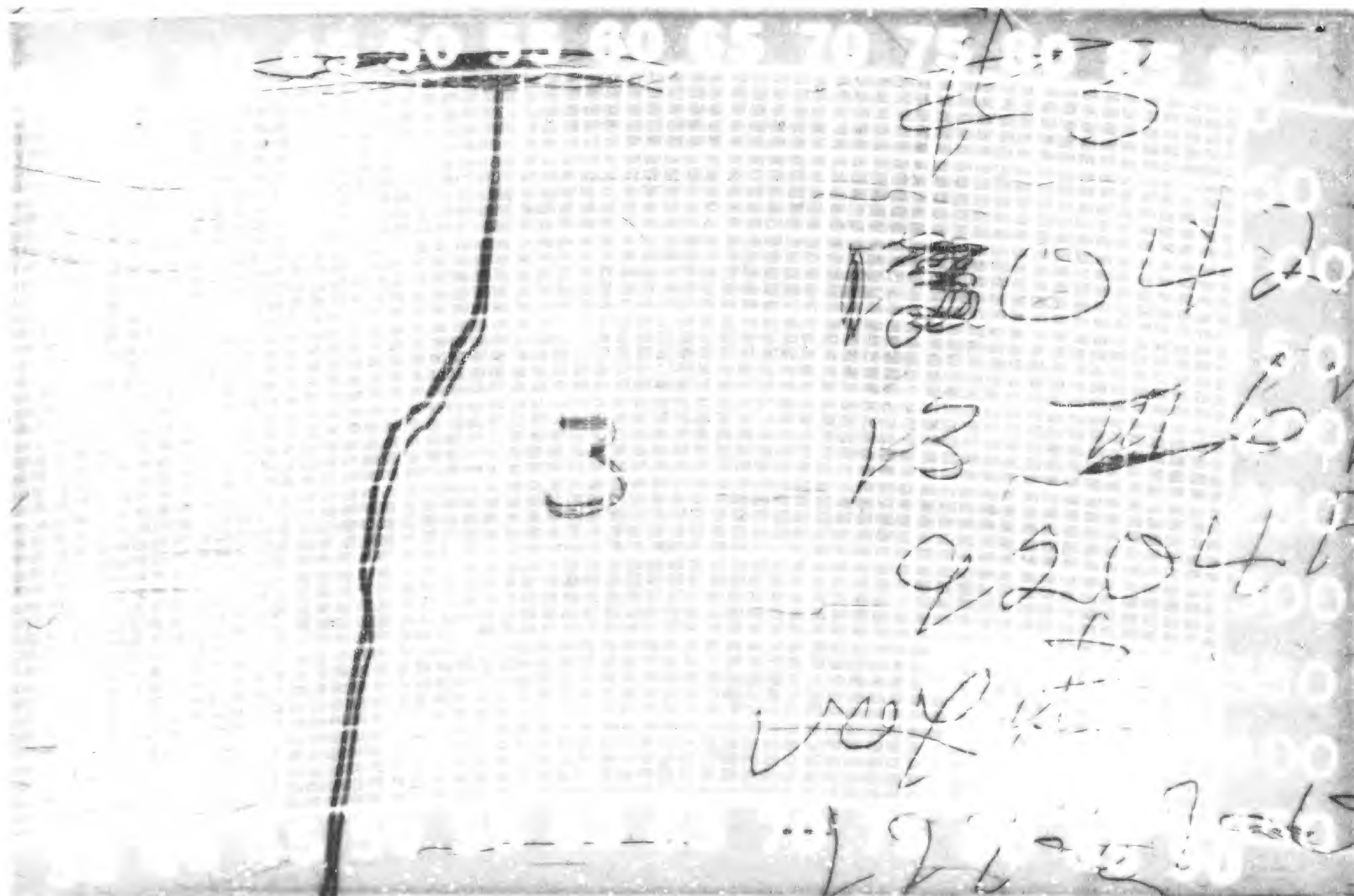


SIO NO 878 3 KEY 35123  
NODC NO 14891 CARD NO 3 GCI 0424 DATE III-13-67  
VESSEL SHEARWATER  
LAT 35° 01' N LONG 123° 10' W DEPTH 2185 SPD  
SURF T 54.5 B WIND D 23 F 13 DRY T 53.0 WET T 50.0  
BAR 14 WEA 1 CL T 3 C 3 VIS SEA 10'  
SWELL DIR HT PER  
TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

4

KEY

35123

NODC NO 14891

CARD  
NO

4

GCT

0801

DATE

III-13-67

VESSEL SHERRWATER

LAT

35°05'N

LONG

123°51'W

DEPTH

2240

SPD

SURF T

53.5B

WIND D

24 F

13

DRY T

53.0

WET T

50.0

BAR

14

WEA

1

CL T

3

C

3

VIS

SEA

09'

SWELL DIR

HT

PER

TCS

0°B

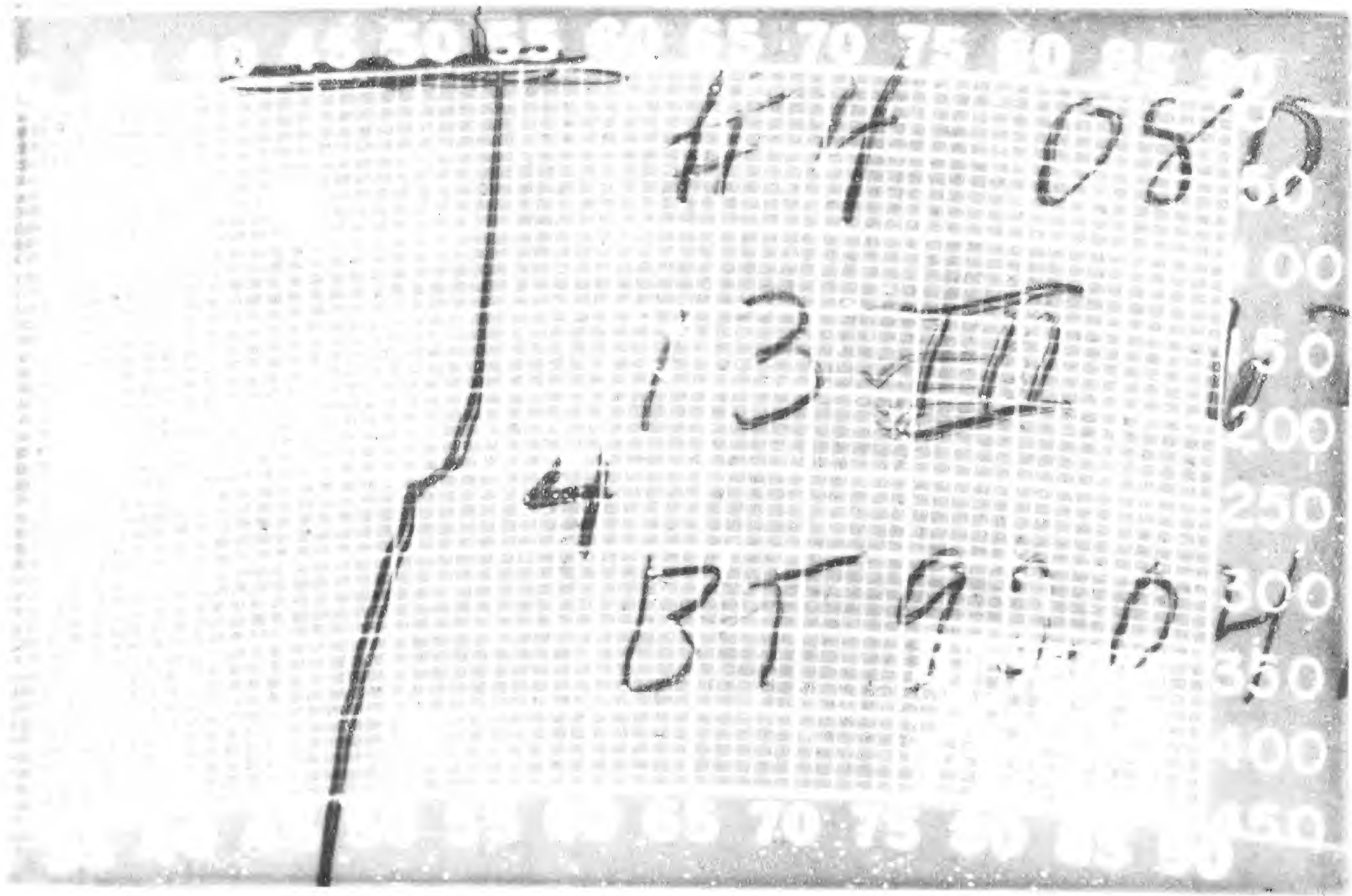
DCS

-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 5 KEY 35124  
NODC NO 14891 CARD NO 5 GCT 1208 DATE III-13-67

VESSEL SHEARWATER

LAT 35°04' N LONG 124°38' W DEPTH 2375 SPD

SURF T 53.5 B WIND D 24 F 15 DRY T 54.0 WET T 50.0

BAR 13 WEA 1 CL T 6 C 3 VIS SEA 12'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

50 55 60 65 70 75 80

#5-12

3 II 67

5

BT-9204

50 55 60 65 70 75 80



SIO NO 878 6 KEY 35125  
NODC NO 14891 CARD NO 6 GCT 1624 DATE III-13-67

VESSEL SHEARWATER

LAT 35°04' N LONG 125°00' W DEPTH 2390 SPD

SURF T 55.0 B WIND D 26 F 18 DRY T 53.0 WET T 49.0

BAR 13 WEA 8 CL T 7 C 7 VIS SEA 10'

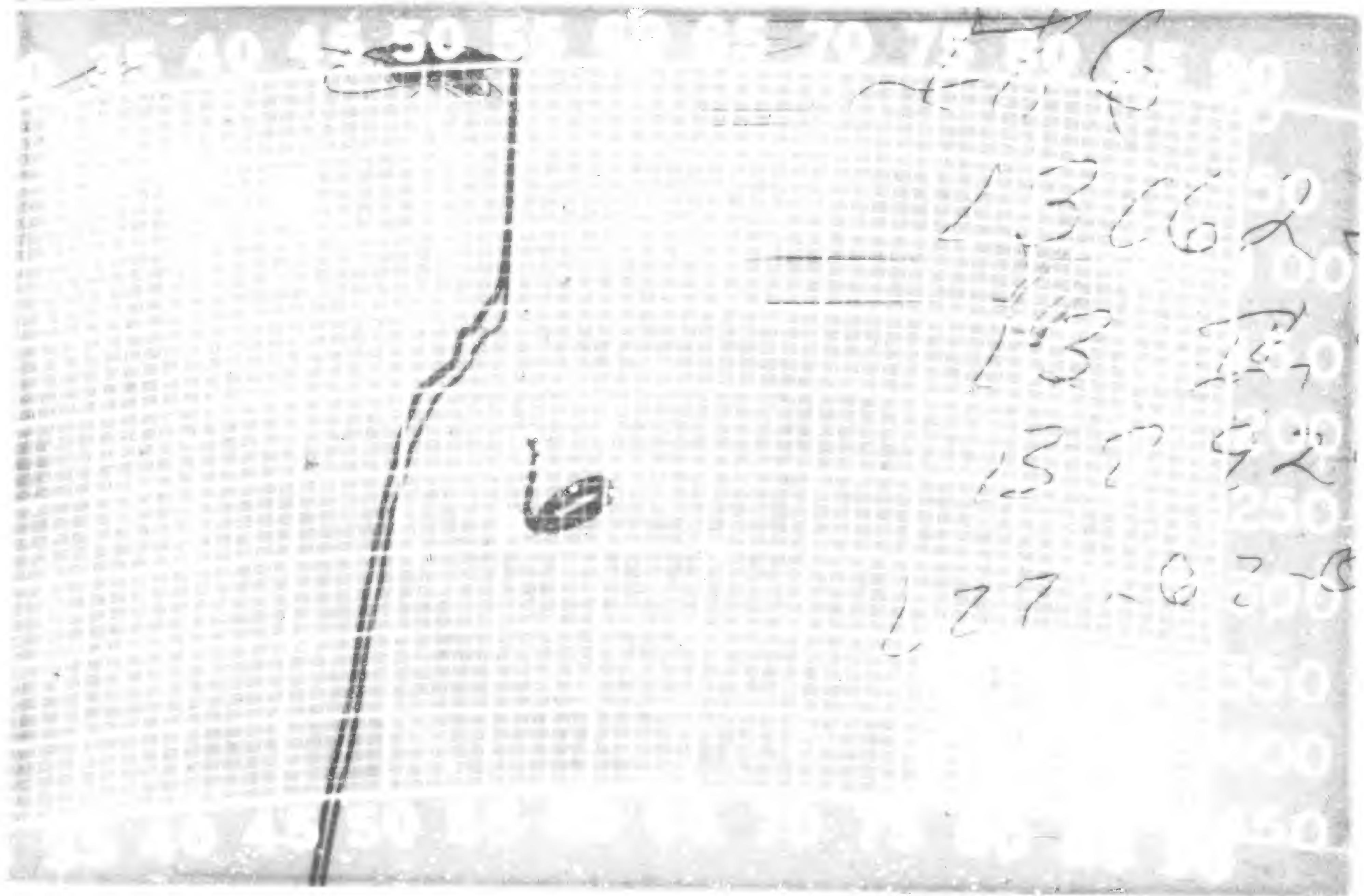
SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

7

KEY

35125

NODC NO 14891 CARD NO 7

GCT 2031

DATE III-13-67

VESSEL SHEARWATER

LAT 35°04' N LONG 125°26' W DEPTH 2500 SPD

SURF T WIND D - F 18 DRY T 52.0 WET T 49.0

BAR 14 WEA 8 CL T 7 C 7 VIS SEA 10'

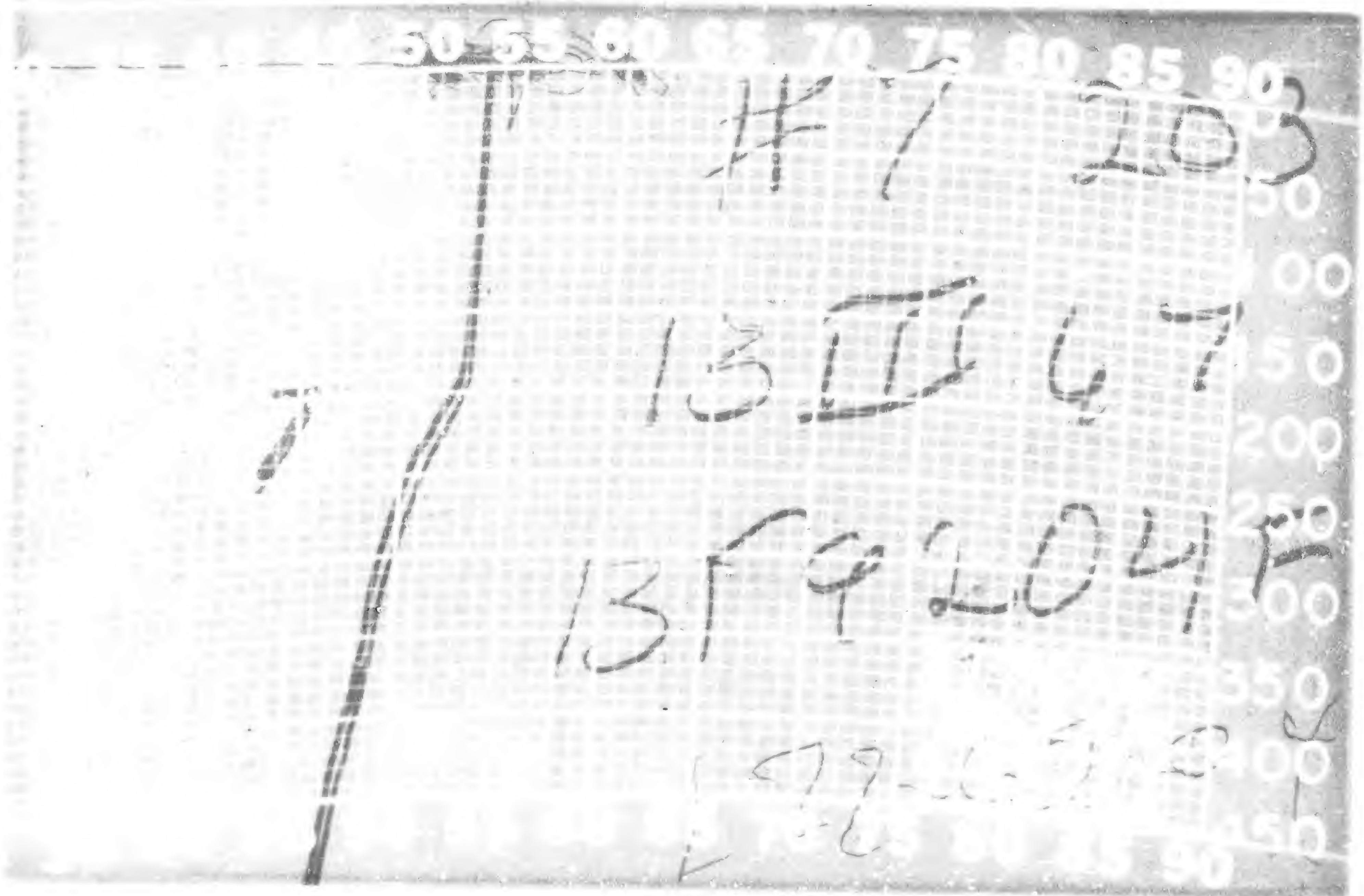
SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



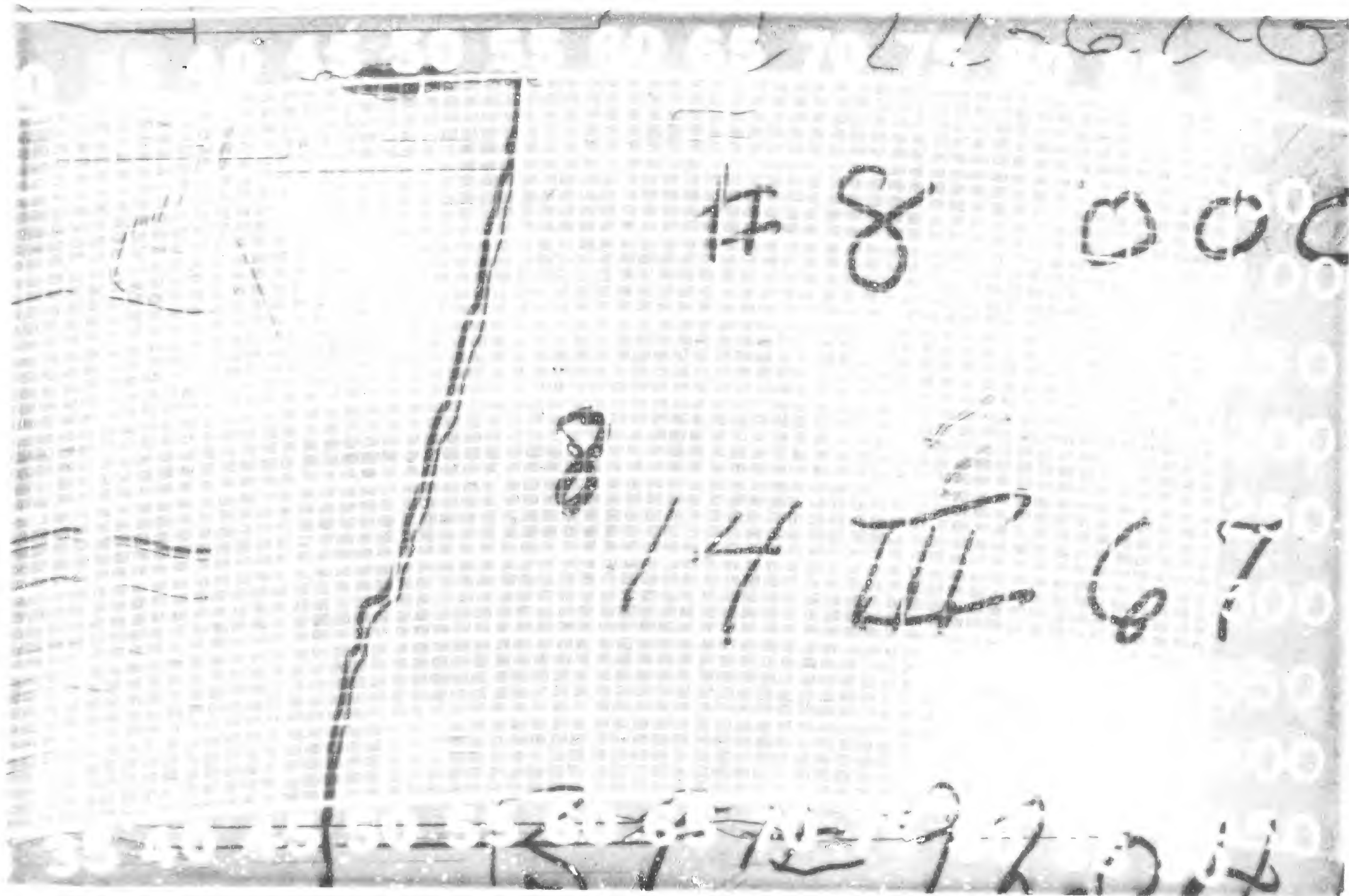


SIO NO 878 8 KEY 35126  
NODC NO 14891 CARD NO 8 GCT 0007 DATE III-14-67  
VESSEL SHEARWATER  
LAT 35°00' N LONG 126°08' W DEPTH 2500 SPD  
SURF T WIND D 31 F 24 DRY T 53.0 WET T 47.0  
BAR 13 WEA 1 CL T 6 C 5 VIS SEA 15'  
SWELL DIR HT PER  
TCS 0.3 DCS -10'

MAY 2 F 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 9 KEY 34126  
NODC NO 14891 CARD NO 9 GUT 0544 DATE III-14-67

VESSEL SHEARWATER

LAT 34° 10' N LONG 126° 15' W DEPTH 2440 SPD

SURF T 56.0 B WIND D 28 F 20 DRY T 53.0 WET T 50.0

BAR 17 WEA 1 CL T 6 C 2 VIS SEA 10'

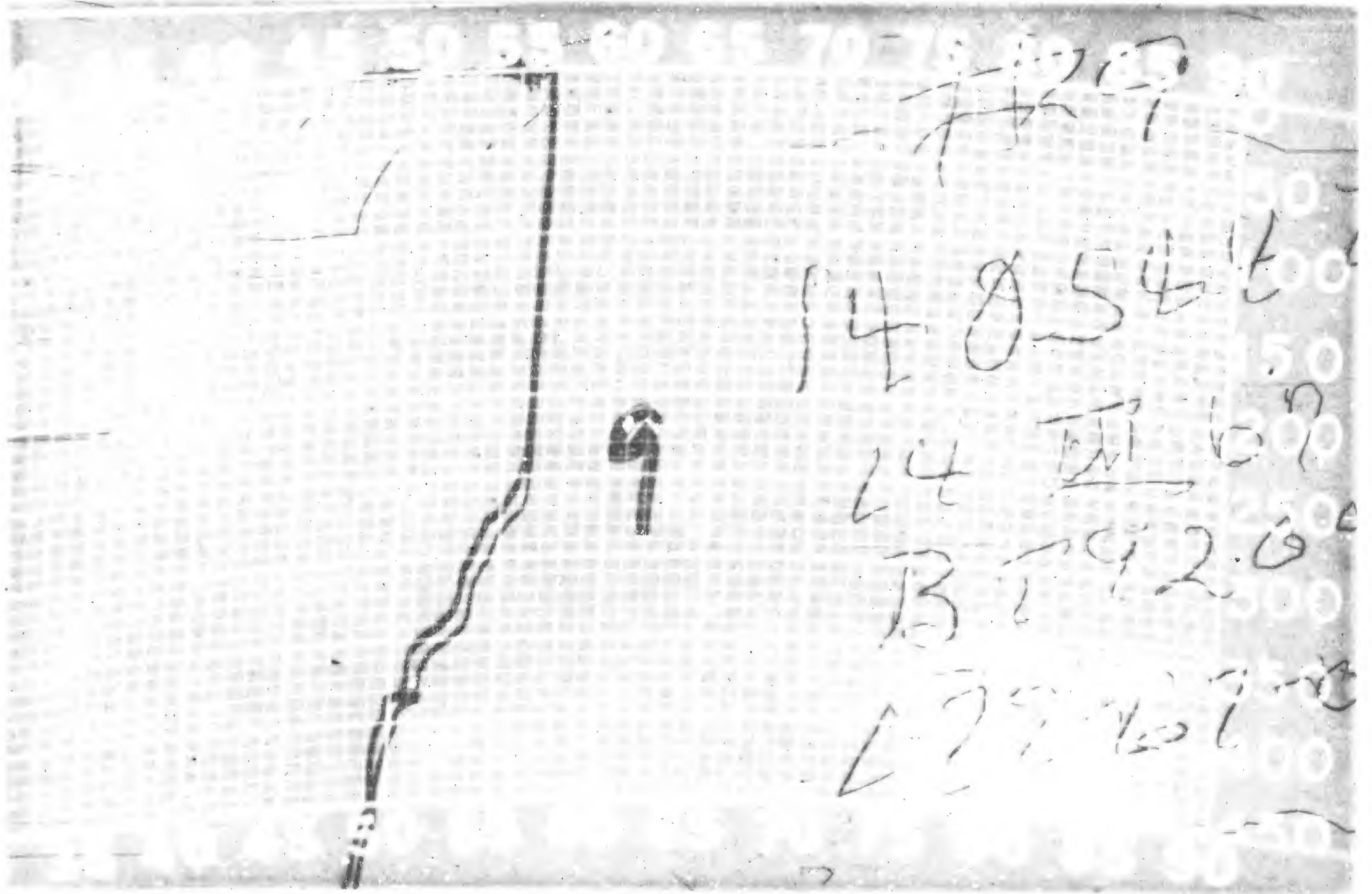
SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

VMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 10 KEY 34125  
NODC NO 14891 CARD NO 10 GCT 0804 DATE III-14-67  
VESSEL SHEARWATER  
LAT 34°10' N LONG 125°46' W DEPTH 2365 SPD  
SURF T WIND D 28 F 20 DRY T 53.0 WET T 50.0  
BAR 18 WEA 1 CL T 6 C 2 VIS SEA 12'  
SWELL DIR HT PER  
TCS 0°B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

#10  
14 0806  
14 III 47  
14 97047  
177-4752

10



SIO NO 878

11

KEY

34124

NODC NO 14891

CARD  
NO //

GCT 1207

DATE III-14-67

VESSEL SHEARWATER

LAT 34°10'N LONG 124°56'W DEPTH 2440 SPD

SURF T WIND D 31 F 10 DRY T 54.0 WET T 50.0

BAR 18 WEA 0 CL T - C 0 VIS SEA 8

SWELL DIR HT PER

TCS 0'13 DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

CRUISE

177-67-0

11-120

14 III 67

RF-10-13-14



SIO NO 878

12

KEY

34123

NODC NO 14891

CARD  
NO

12

GCT 1806

DATE III-14-67

VESSEL SHEARWATER

LAT 34°12' N LONG 123°35' W DEPTH 2400 SPD

SURF T 55.0 B WIND D 16 F 17 DRY T 55.0 WET T 50.0

BAR 21 WEA 1 CL T 3 C 3 VIS SEA 8

SWELL DIR

HT

PER

TCS 0'B

DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

13

KEY

34123

NODC NO 14891 CARD NO

13

GCT

2032

DATE

III-14-67

VESSEL SHEARWATER

LAT 34°12' N LONG 123°10' W DEPTH 2345 SPD

SURF T WIND D 16 F 17 DRY T 56.0 WET T 50.0

BAR 22 WEA 1 CL T 8 C 4 VIS SEA 06'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

45 50 55 60 65 70 75 80 85 90

#13

13

177

6.7

0.4

20

32

14

III L

BT

92

0.4

1.4

100  
150  
200  
250  
300  
350  
400  
50



SIO NO 878

14

KEY

34121

NODC NO 14891 CARD NO

14

GCT

0802

DATE

III-18-67

VESSEL SHEARWATER

LAT 34°05' N LONG 121°20' W DEPTH 1969 SPD

SURF T 57.0 B WIND D 32 F 17 DRY T 56.0 WET T 56.0

BAR 23 WEA 1 CL T 6 C 4 VIS SEA 09'

SWELL DIR

HT

PER

TCS

0'B

DCS

-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



080250

~~1814~~ 100

1577-67-200

BT

~~1014~~

920450



SIO NO 878

15

KEY

33121

NODC NO 14891 CARD NO

15

GCT

1205

DATE

III-18-67

VESSEL SHEARWATER

LAT 33° 20' N LONG 121° 34' W DEPTH 2240 SPD

SURF T 56.0 B WIND D 32 F 18 DRY T 60.0 WET T 58.0

BAR 21 WEA 1 CL T 6 C 5 VIS SEA 10'

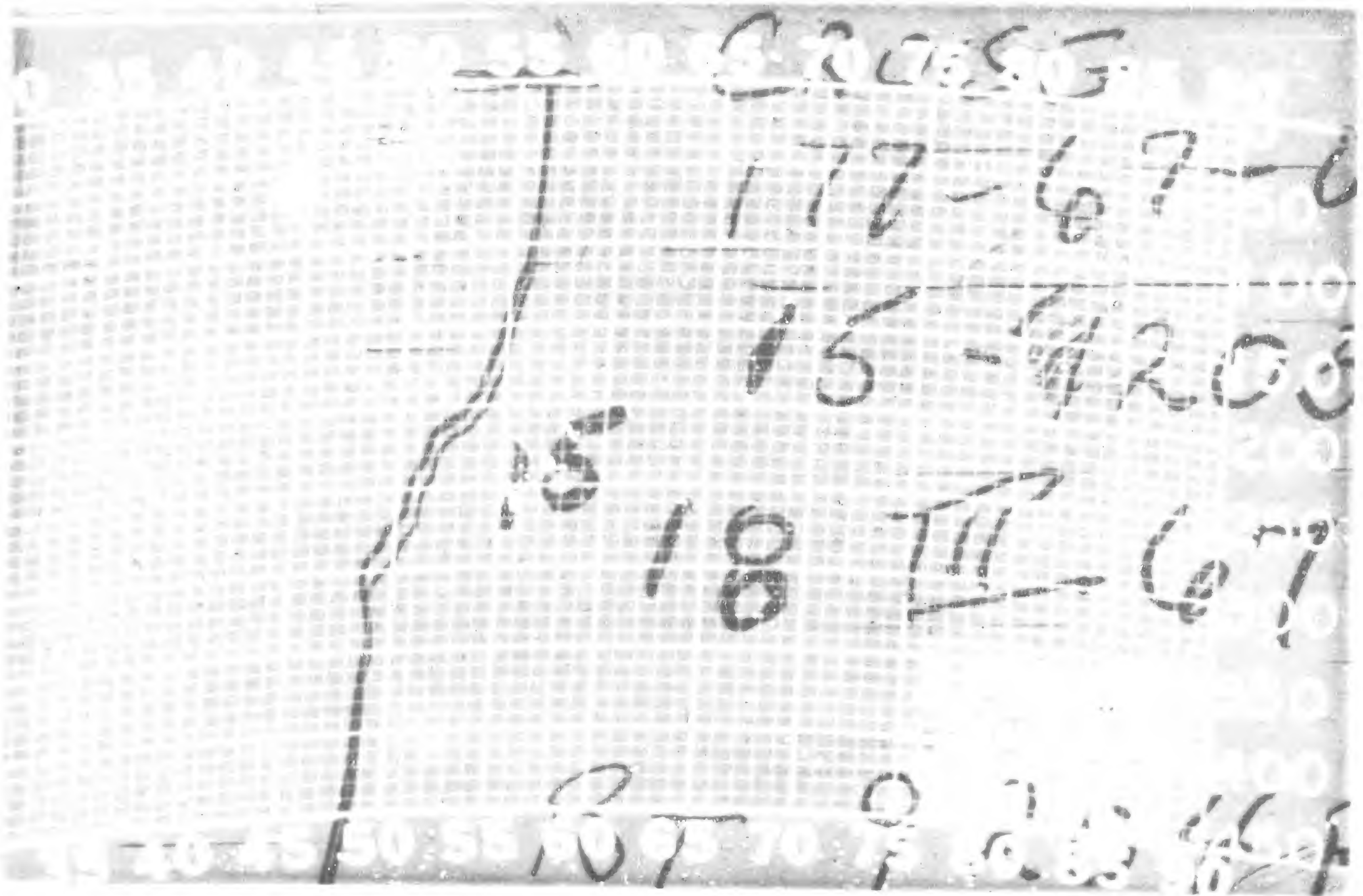
SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

16

KEY

34122

NODC NO 14891

CARD  
NO

16

GCT

1624

DATE

III-18-67

VESSEL SHEARWATER

LAT 34°20' N LONG 122°20' W DEPTH 2400 SPD

SURF T 56.5 B WIND D 35 F 17 DRY T 56.0 WET T 56.0

BAR 23 WEA 1 CL T 3 C 8 VIS SEA 07'

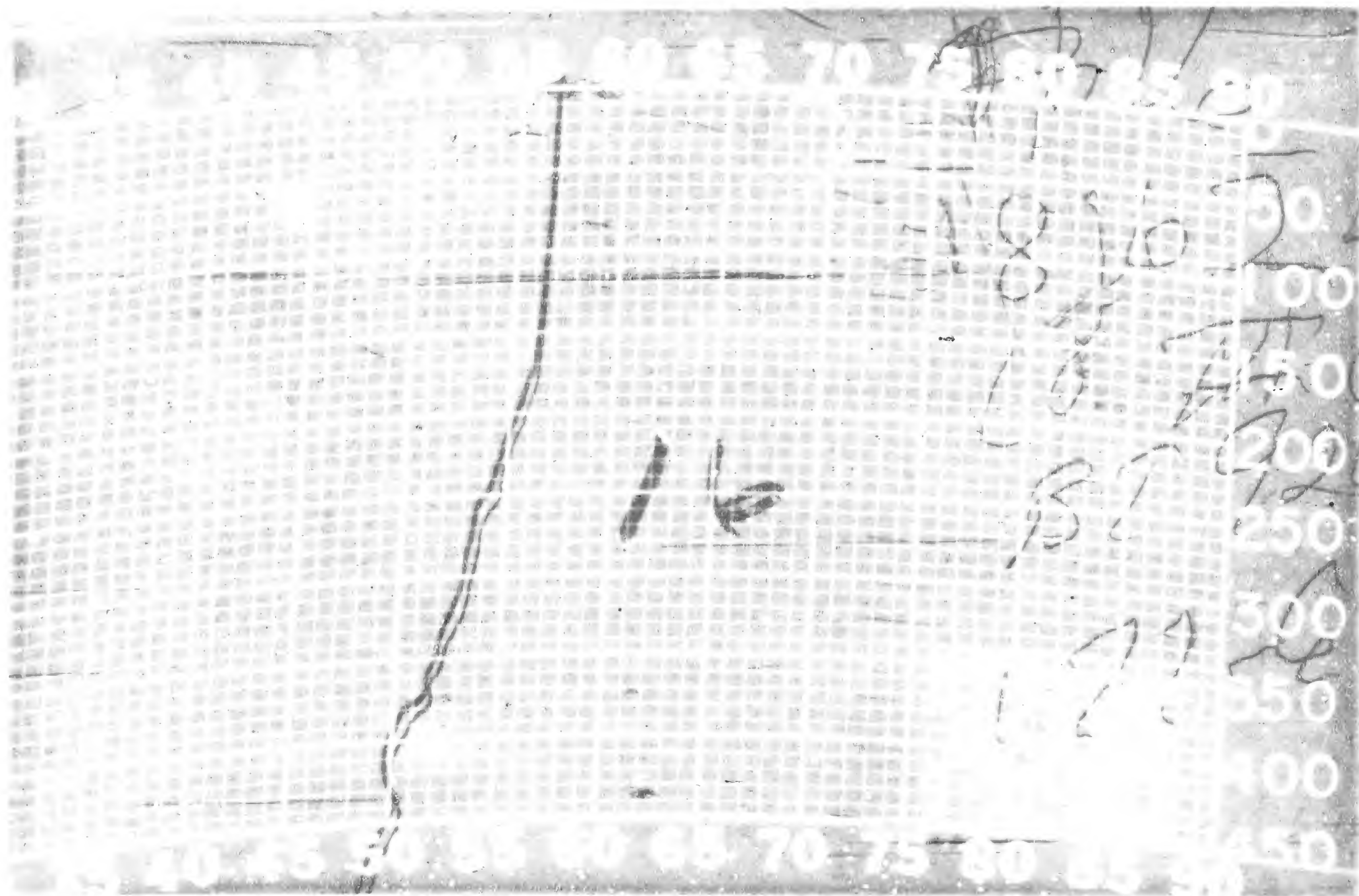
SWELL DIR HT PER

TCS 0°B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 28 KEY 33121  
NODC NO 14891 CARD NO 28 GCT 1625 DATE III-20-67

VESSEL

LAT 33°29' N LONG 121056' W DEPTH 2400 SPD  
SURF T 58.0 B WIND D 34 F 11 DRY T 61.0 WET T 57.0  
BAR 21 WEA 2 CL T 6 C 8 VIS SEA 06'

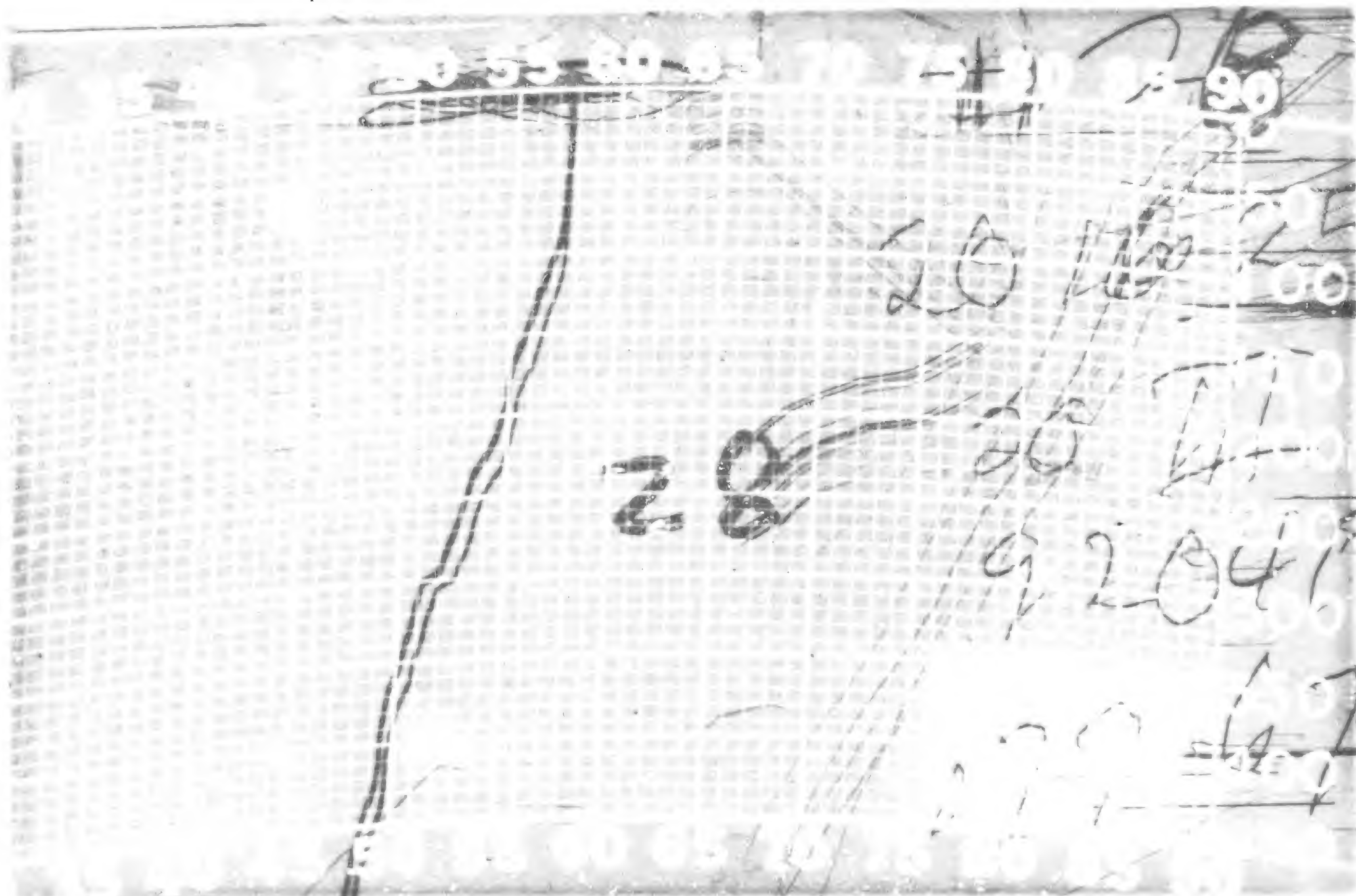
SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878

29

KEY

32121

NODC NO 14891 CARD NO

29

GCT

2036

DATE

III - 20 - 67

VESSEL SHEARWATER

LAT 32° 13' N LONG 121° 02' W DEPTH 2240 SPD

SURF T WIND D 32 F 14 DRY T 60.0 WET T 57.0

BAR 25 WEA 1 CL T 6 C 4 VIS SEA 04'

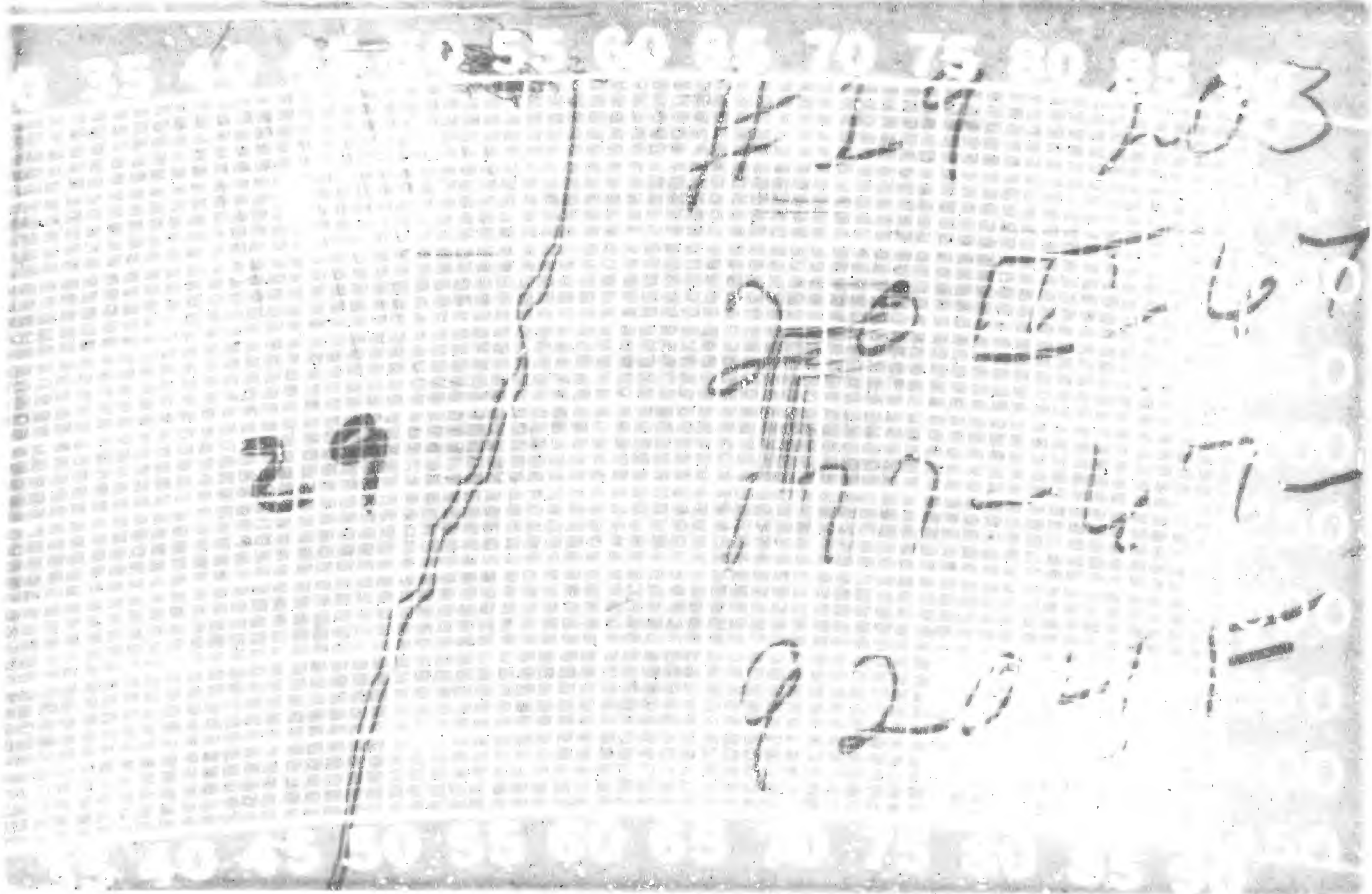
SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 878 30 KEY 32121  
NODC NO 14891 CARD NO 30 GCT 0028 DATE III-21-67

VESSEL SHEARWATER

LAT 32°45' N LONG 121°05' W DEPTH 2160 SPD

SURF T 57.5 B WIND D 32 F 14 DRY T 60.0 WET T 57.0

BAR 25 WEA 1 CL T 1 C 3 VIS SEA 06'

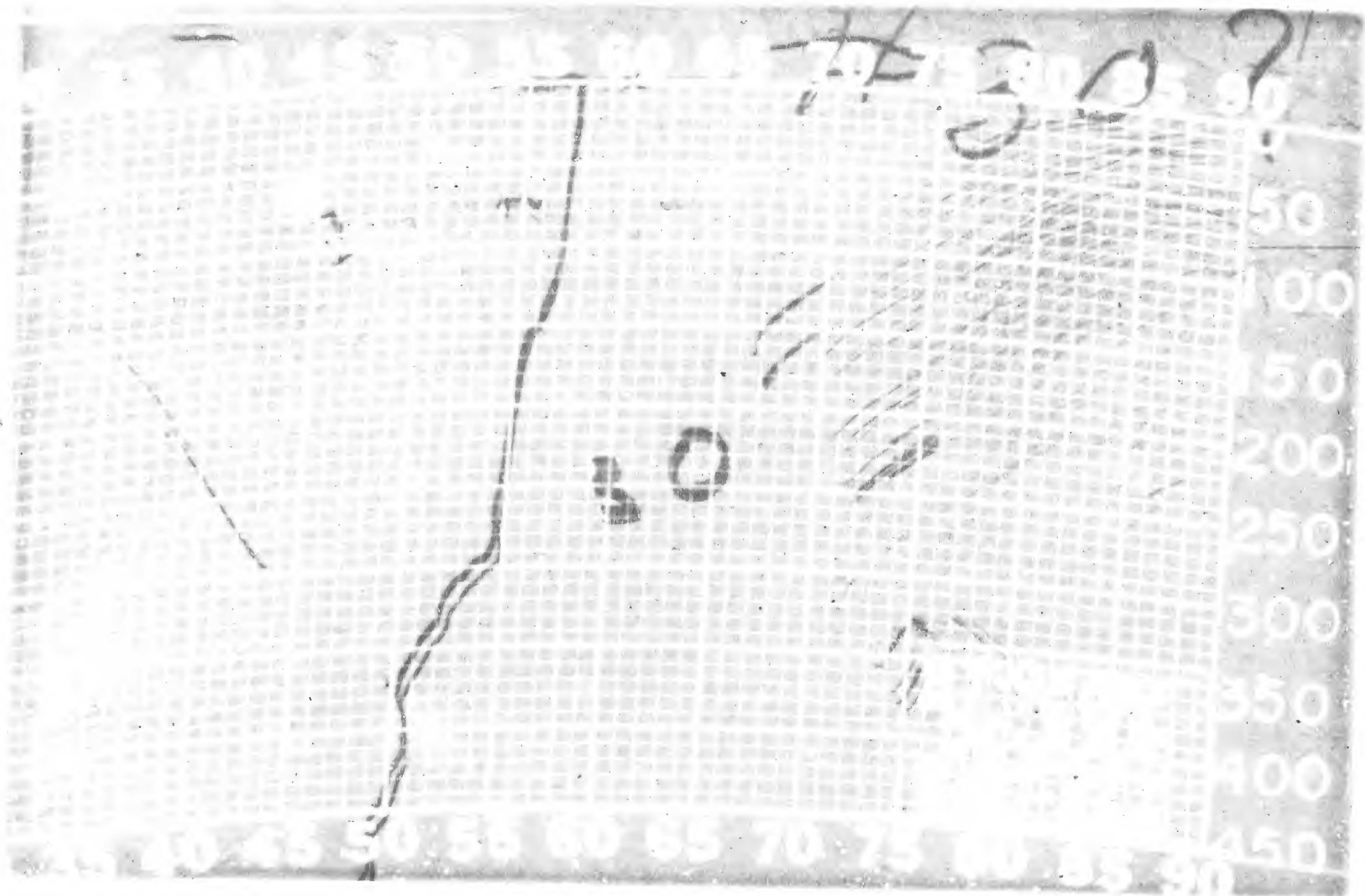
SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 880

KEY 34123

NODC NO 14893 CARD NO

2

GCT 0408

DATE IV-20-67

VESSEL SHEARWATER

LAT 34°58'N LONG 123°26'W

DEPTH 2245 SPD -

SURF T 53.5B WIND D 28 F 10 DRY T 52.0

WET T 47.0

BAR 19

WEA 1

CL T 4

C 6

VIS -

SEA 02'

SWELL DIR

HT

PER

TCS -0.2'B

DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



#2

2004082

20 IV 10

92 94 F

477-67-



SIO NO 880

KEY 35122

NODC NO 14893

CARD  
NO 1

GCT 0004

DATE IV-20-67

VESSEL SHEARWATER

LAT 35°00'N LONG 122°41'W

DEPTH 2229 SPD —

SURF T — WIND D 28 F 10 DRY T 56.0 WET T 50.0

BAR 17 WEA 1 CL T 8 C 3 VIS — SEA 05'

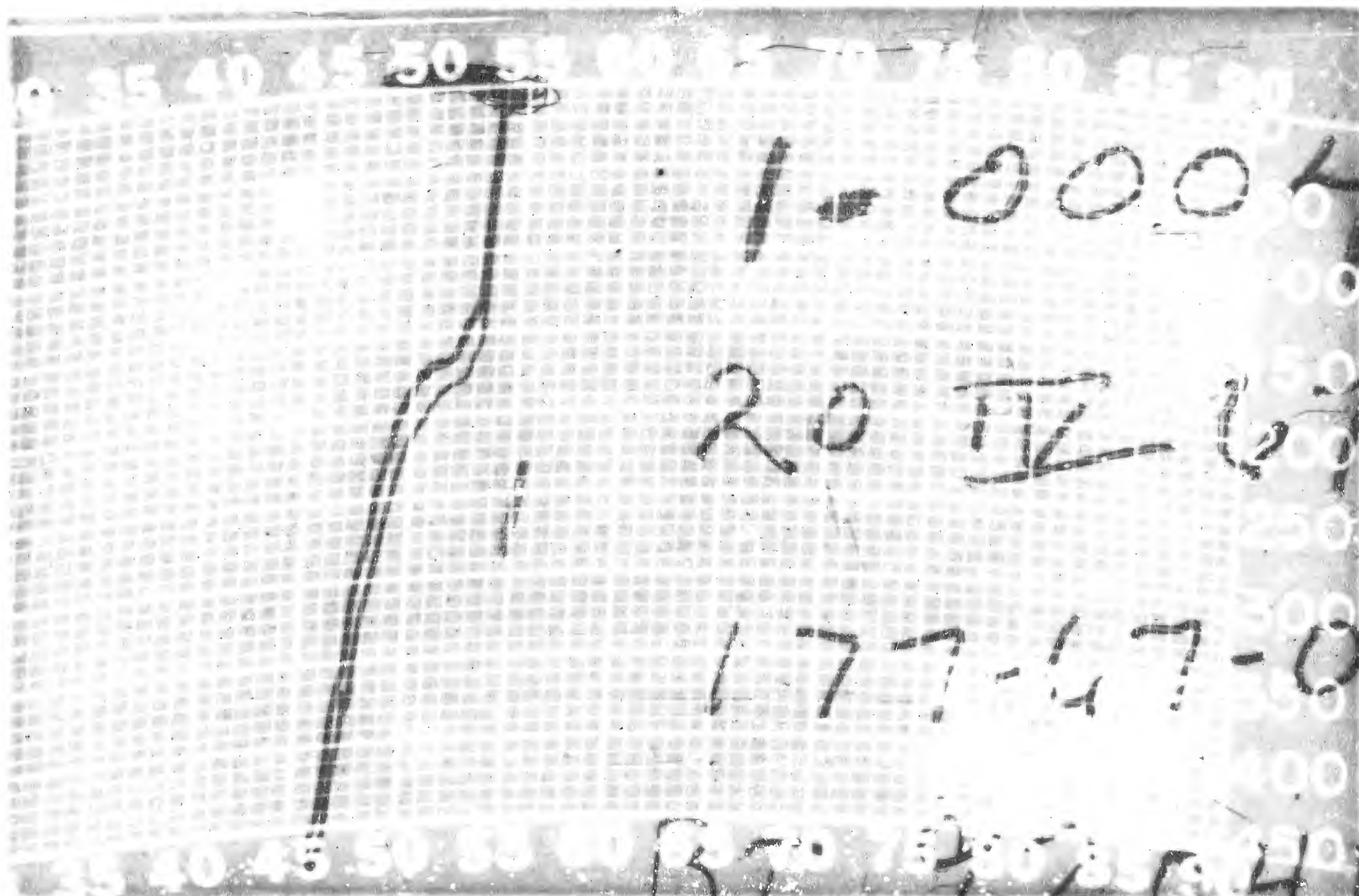
SWELL DIR HT PER

TCS -0.2 B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 880 3 KEY 35124  
NODC NO 14893 CARD NO 3 GCT 0810 DATE IV-20-67  
VESSEL SHEARWATER  
LAT 35°00' N LONG 124°15' W DEPTH 2320 SPD —  
SURF T 54.53 WIND D 28 F 10 DRY T 52.0 WET T 48.0  
BAR 19 WEA 1 CL T 6 C 6 VIS — SEA 03'  
SWELL DIR HT PER  
TCS -0.213 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HC PUBL 6060 (REV 1956) Scripps Institution of Oceanography

550 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100  
#3

9204

200810

20116

177-67





SIO NO 880

4

KEY

35125

NODC NO 14893

CARD  
NO

4

GCT

1205

DATE

IV-20-67

VESSEL

SHEARWATER

LAT

35°00'N

LONG

125°03'W

DEPTH

2395

SPD

—

SURF T

54.03

WIND D

99

F

—

DRY T

54.0

WET T

52.0

BAR

17

WEA

1

CL T

6

C

5

VIS

—

SEA

02'

SWELL DIR

HT

PER

TCS

-0.23

DCS

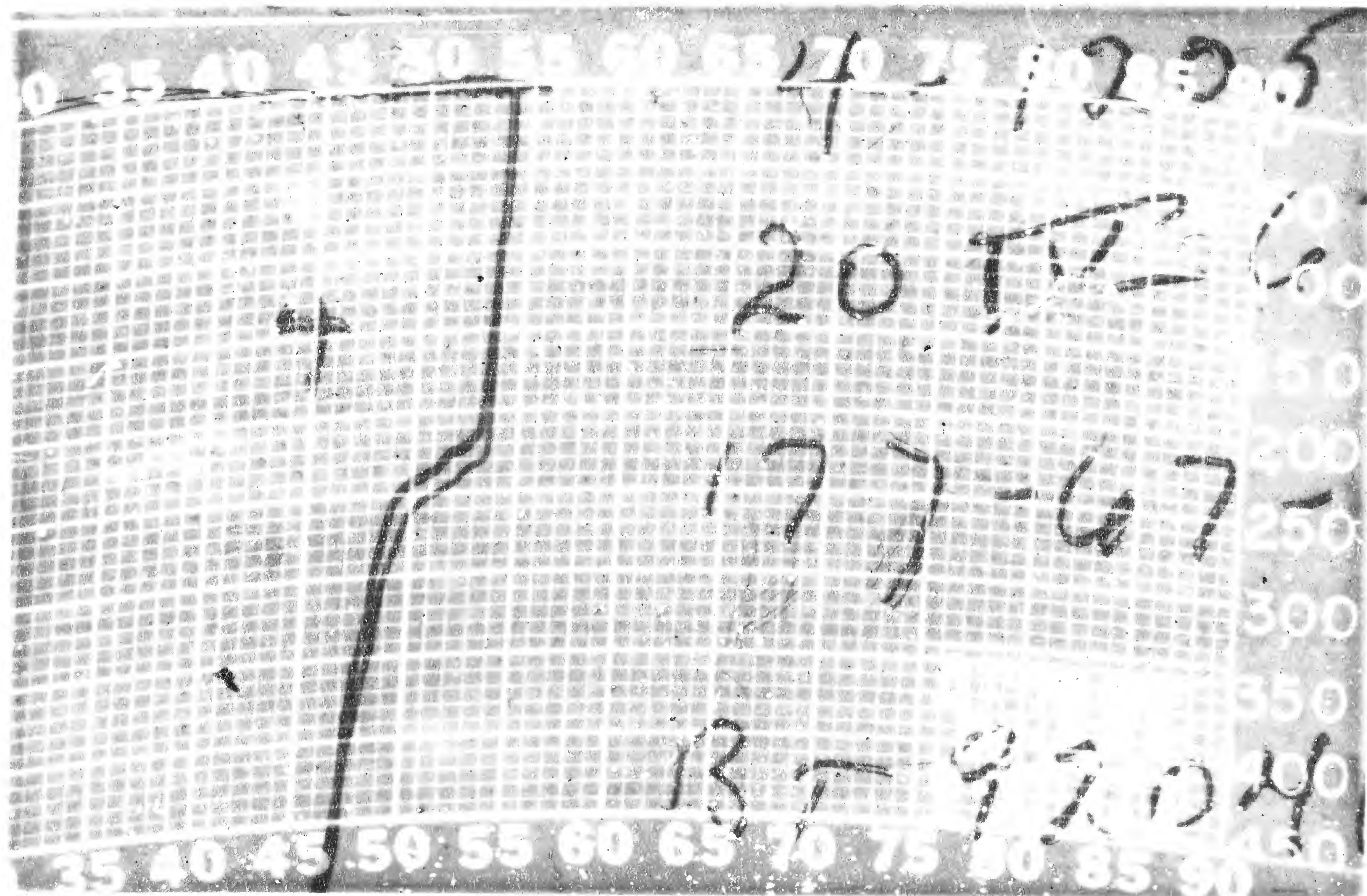
-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography







SIG NO 880

5

KEY 35125

NODC NO 14893

CARD  
NO

5

GCT 1608

DATE IV-20-67

VESSEL SHEARWATER

LAT 35°00'N

LONG 125°53'W

DEPTH 2420

SPD —

SURF T —

WIND D 29 F 10

DRY T 55.0

WET T 49.0

BAR 17

WEA 1

CL T 6

C 5

VIS —

SEA 03'

SWELL DIR

HT

PER

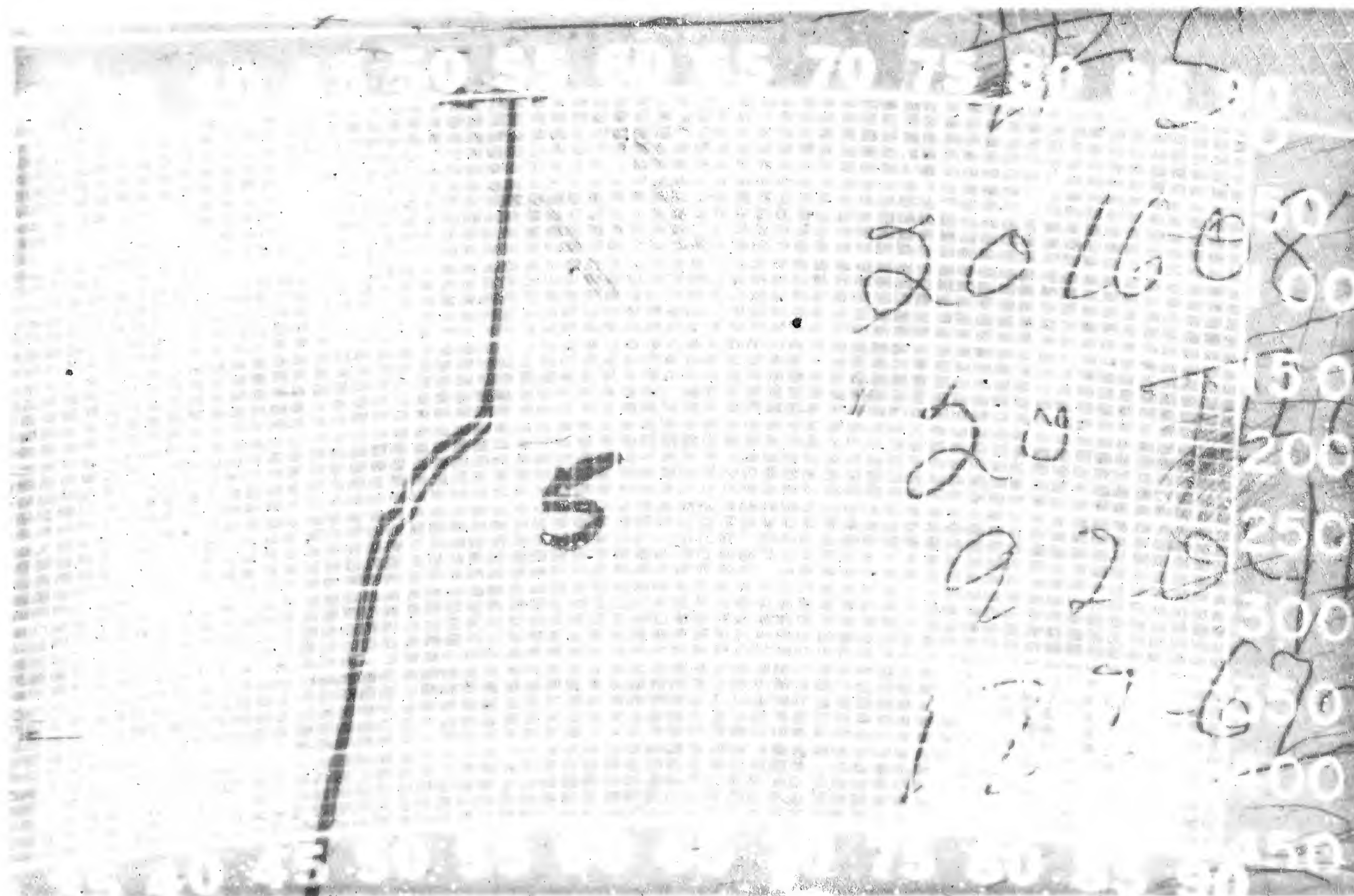
TCS -0.23

DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606a (REV 1956) Scripps Institution of Oceanography





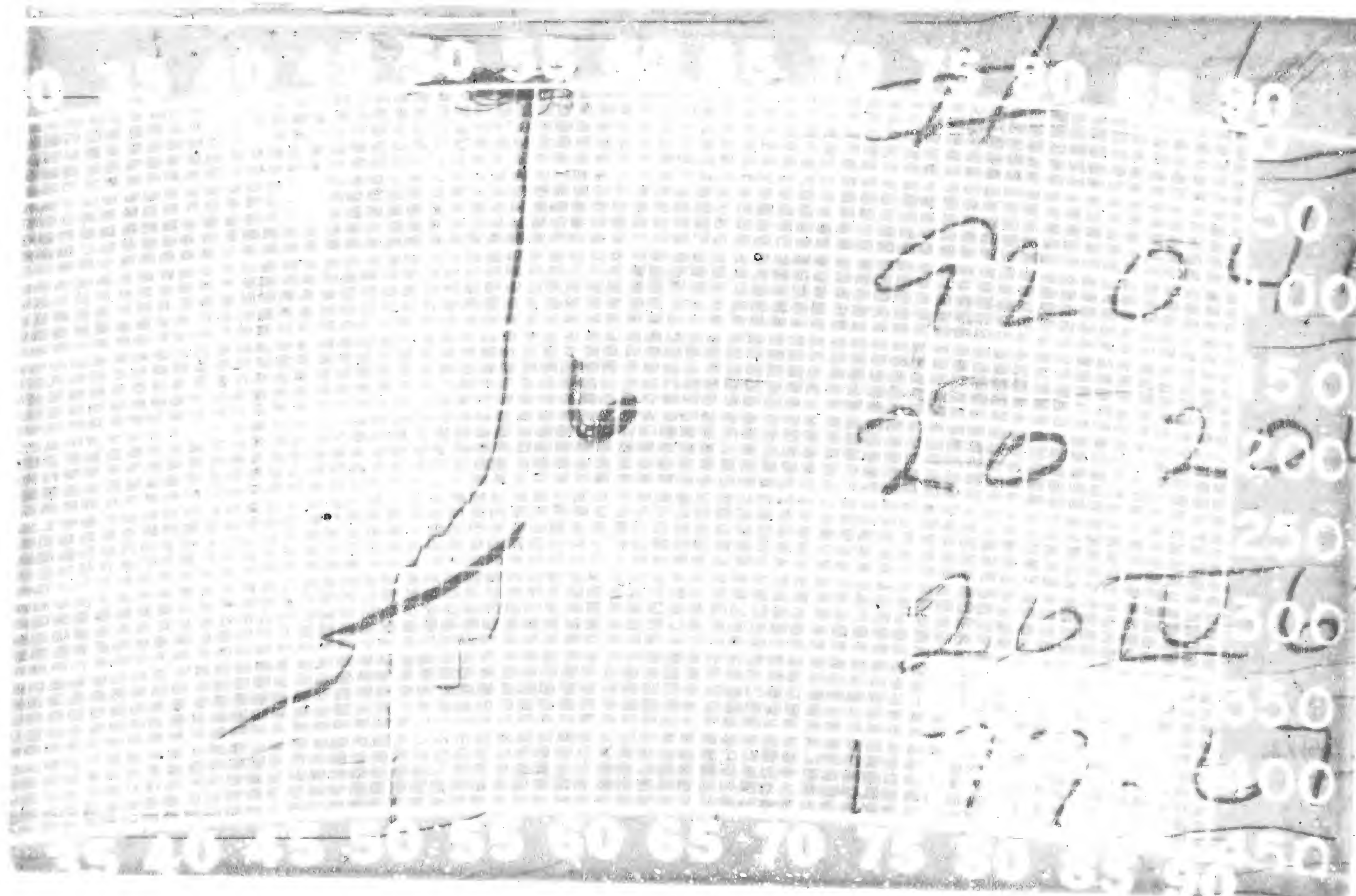
SIO NO 880 KEY 34126  
NODC NO 14893 CARD NO 6 GCT 2040 DATE IV-20-67  
VESSEL SHEARWATER  
LAT 34°44'N LONG 126°21'W DEPTH 2560 SPD —  
SURF T 55.03 WIND D 28 F 15 DRY T 58.0 WET T 50.0  
BAR 16 WEA 1 CL T 6 C 5 VIS — SEA 03'  
SWELL DIR HT PER  
TCS -0.23 DCS -10'

DO NOT READ AFTER 320 FT.

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 880

7

KEY

34126

NODC NO 14893

CARD

NO

7

GCT 0004

DATE IV-21-67

VESSEL SHEARWATER

LAT 34°10'N

LONG

126°22'W

DEPTH

2440

SPD

—

SURF T 57.0 B

WIND D

27

F 10

DRY T

52.0

WET T

53.0

BAR 16

WEA

5

CL T

6

C

7

VIS

—

SEA

04'

SWELL DIR

HT

PER

TCS

-0.2 B

DCS

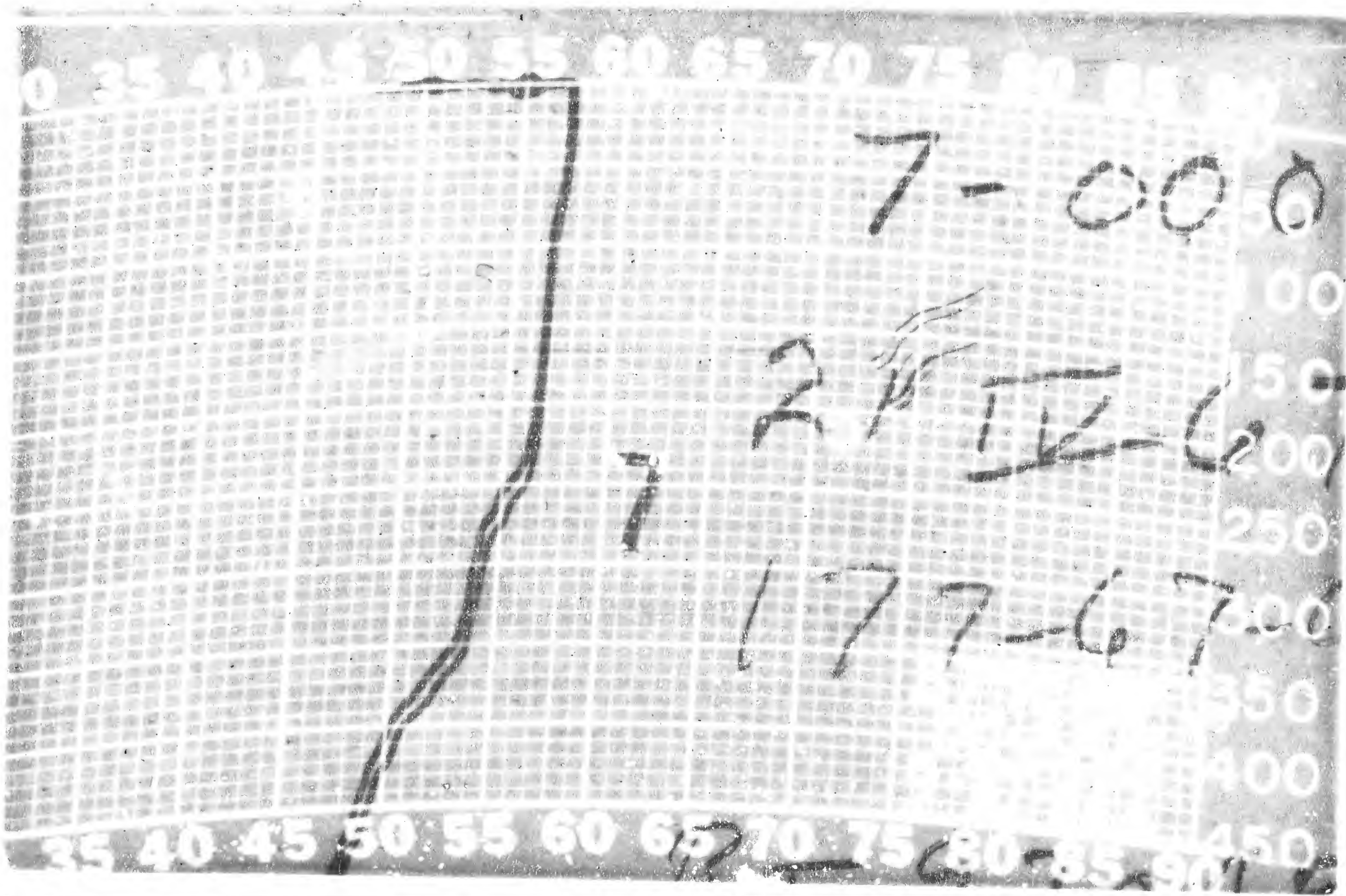
-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





7-0050

2 1/2  
IV

177-6

7



SIO NO 880

8

KEY

34125

NODC NO 14893

CARD NO

8

GCT

0415

DATE

IV-21-67

VESSEL

SHEARWATER

LAT

34°10'N

LONG

125°38'W

DEPTH

2515

SPD

—

SURF T

—

WIND D

28

F

16

DRY T

54.0

WET T

50.0

BAR

15

WEA

8

CL T

6

C

7

VIS

—

SEA

06'

SWELL DIR

HT

PER

TCS

-0.2 B

DCS

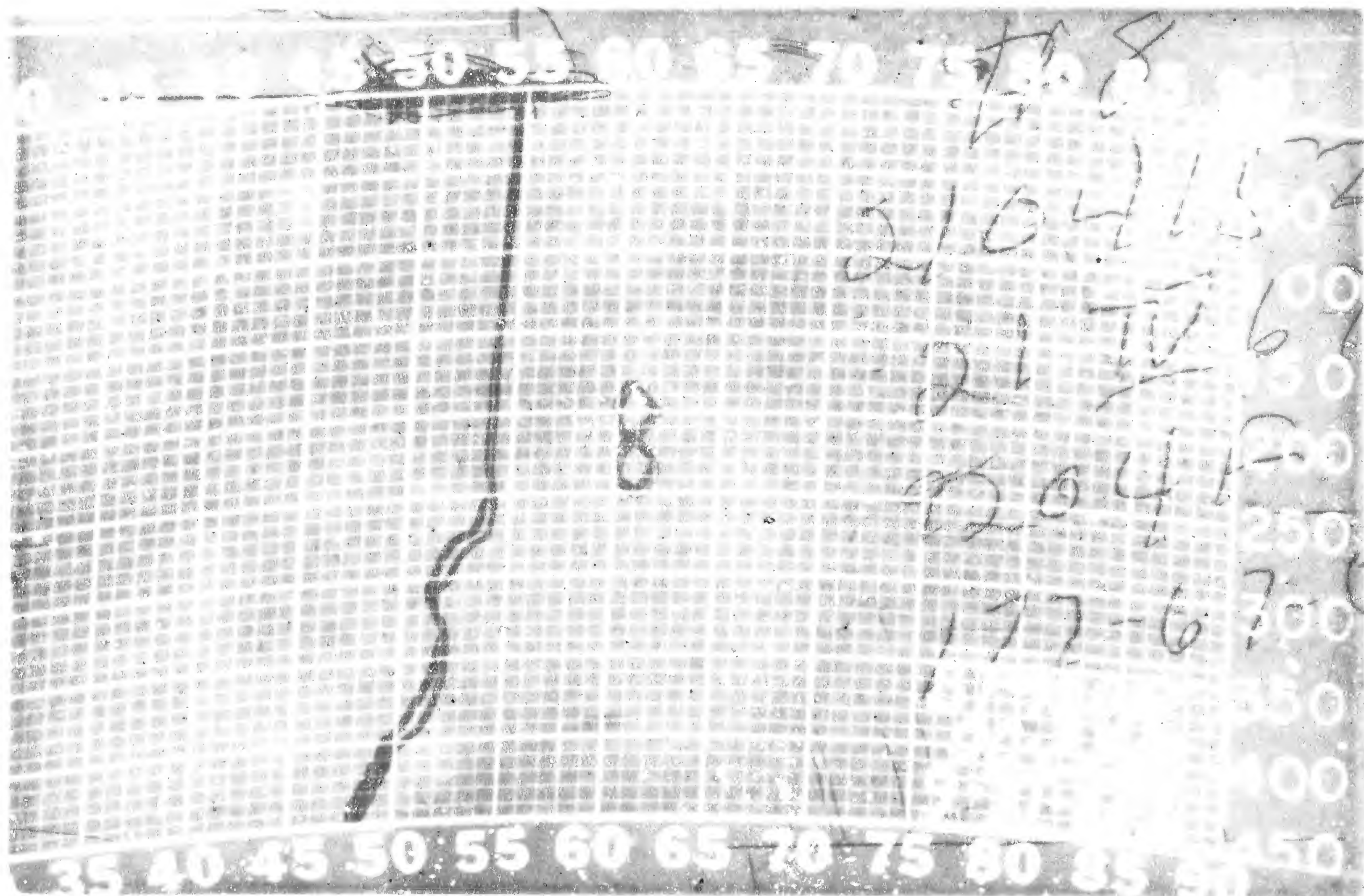
-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 880

9

KEY

34121

NODC NO 14893

CARD  
NO

9

GCT

2130

DATE

IV-21-67

VESSEL SHEARWATER

LAT 34°11'N

LONG

121°40'W

DEPTH

1995

SPD

—

SURF T 56.5B

WIND D

27 F 12

DRY T

62.0

WET T

52.0

BAR

16

WEA

1

CL T

9

C

6

VIS

—

SEA

04'

SWELL DIR

HT

PER

TCS

+2.3B

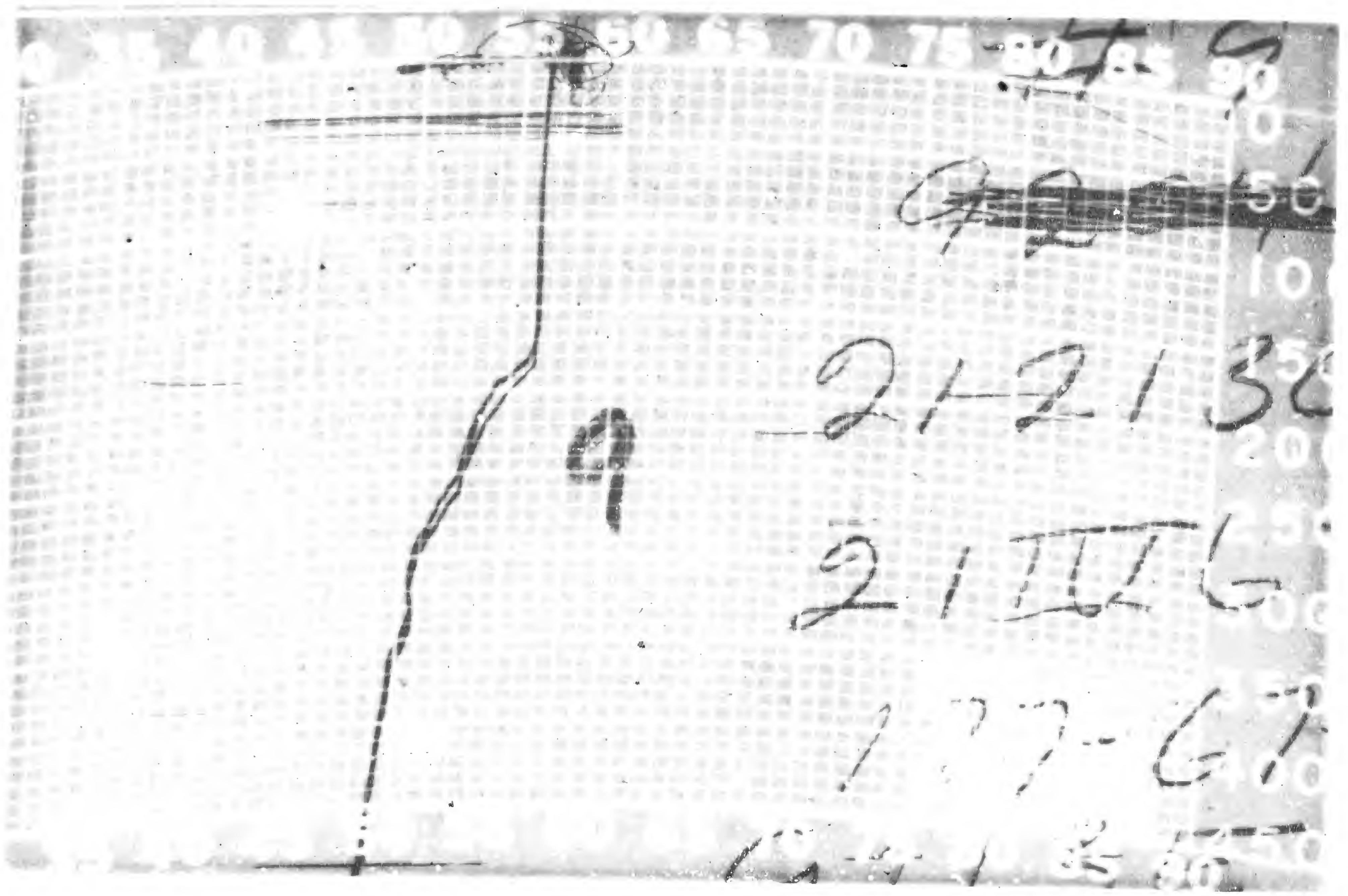
DCS

0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 880

KEY 34121

NODC NO 14893

CARD

NO

10

GCT 0004

DATE IV-22-67

VESSEL SHEARWATER

LAT 34°05'N

LONG 121°20'W

DEPTH 1599

SPD —

SURF T —

WIND D 24 F 12

DRY T 59.0

WET T 53.0

BAR 15

WEA 1

CL T 6

C 6

VIS —

SEA 04'

SWELL DIR

HT

PER

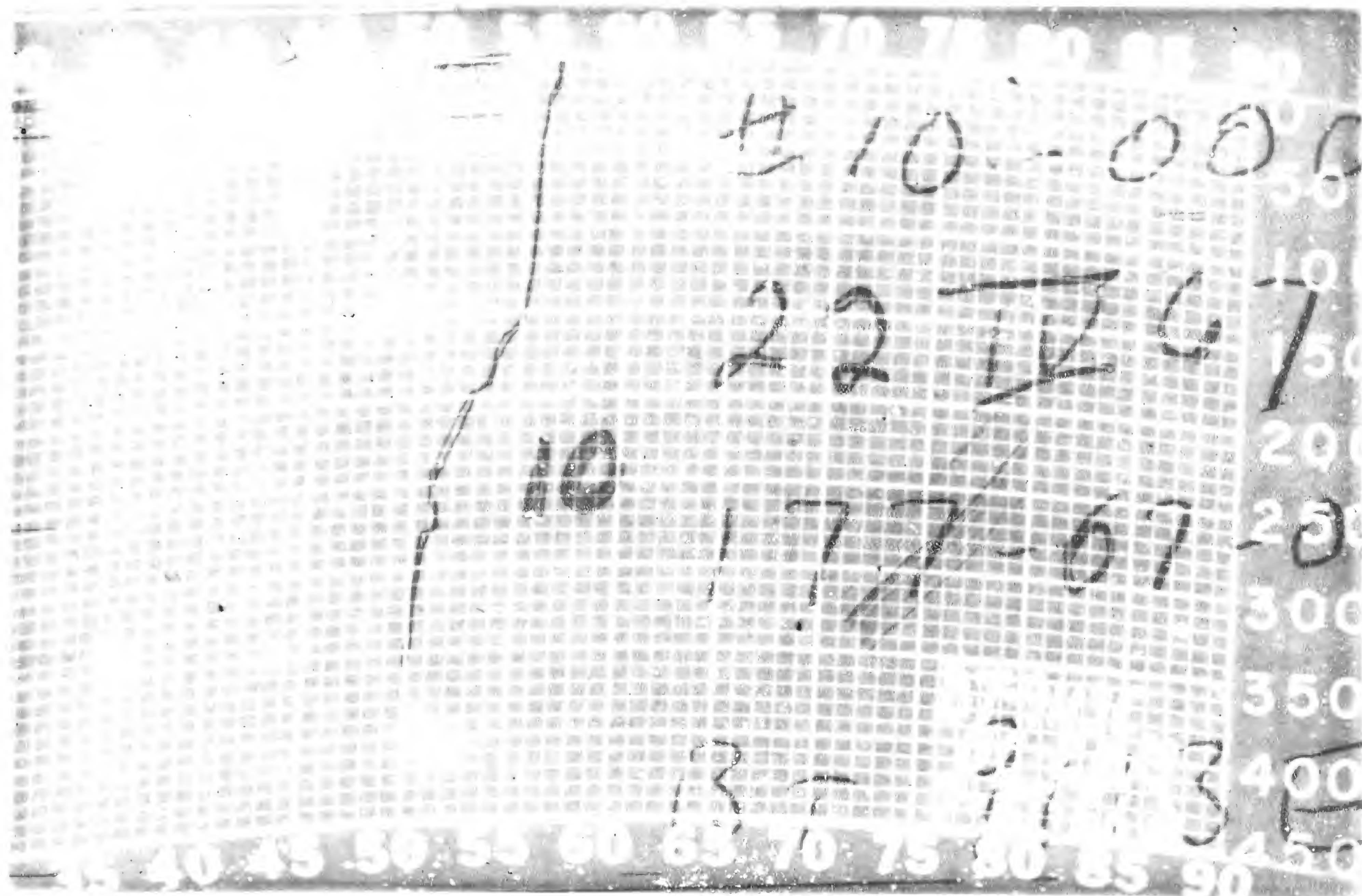
TCS +2.3 B

DCS 0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 880

KEY

33121

NODC NO 14893

CARD

NO

11

GCT

0408

DATE

IV-22-67

VESSEL

SHEARWATER

LAT

33°22'N

LONG

121°29'W

DEPTH

2020

SPD

—

SURF T

—

WIND D

27 F 10

DRY T

56.0

WET T

52.0

BAR

16

WEA

2

CL T

8

C

8

VIS

—

SEA

03'

SWELL DIR

HT

PER

TCS

+2.3 B

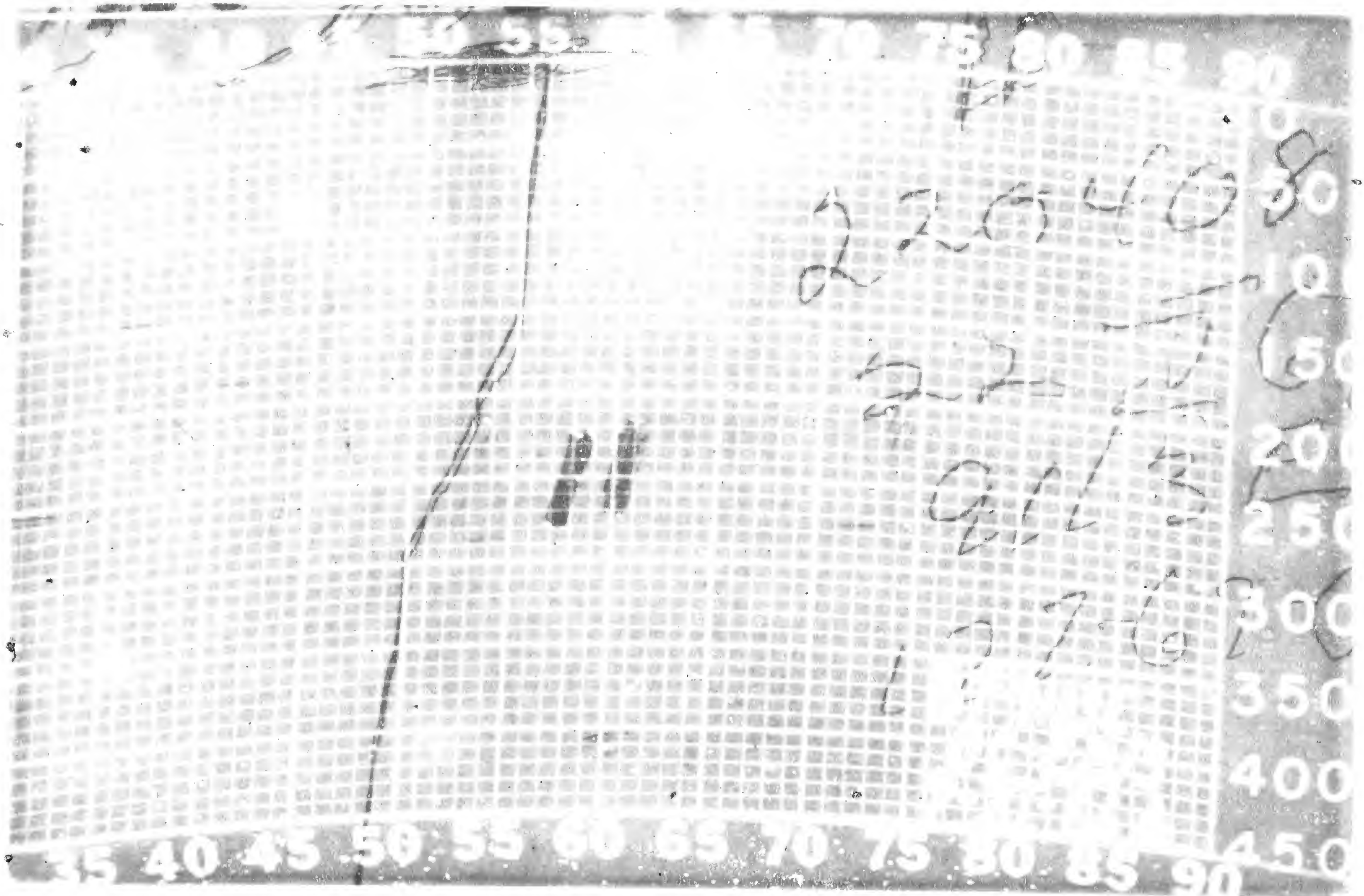
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MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





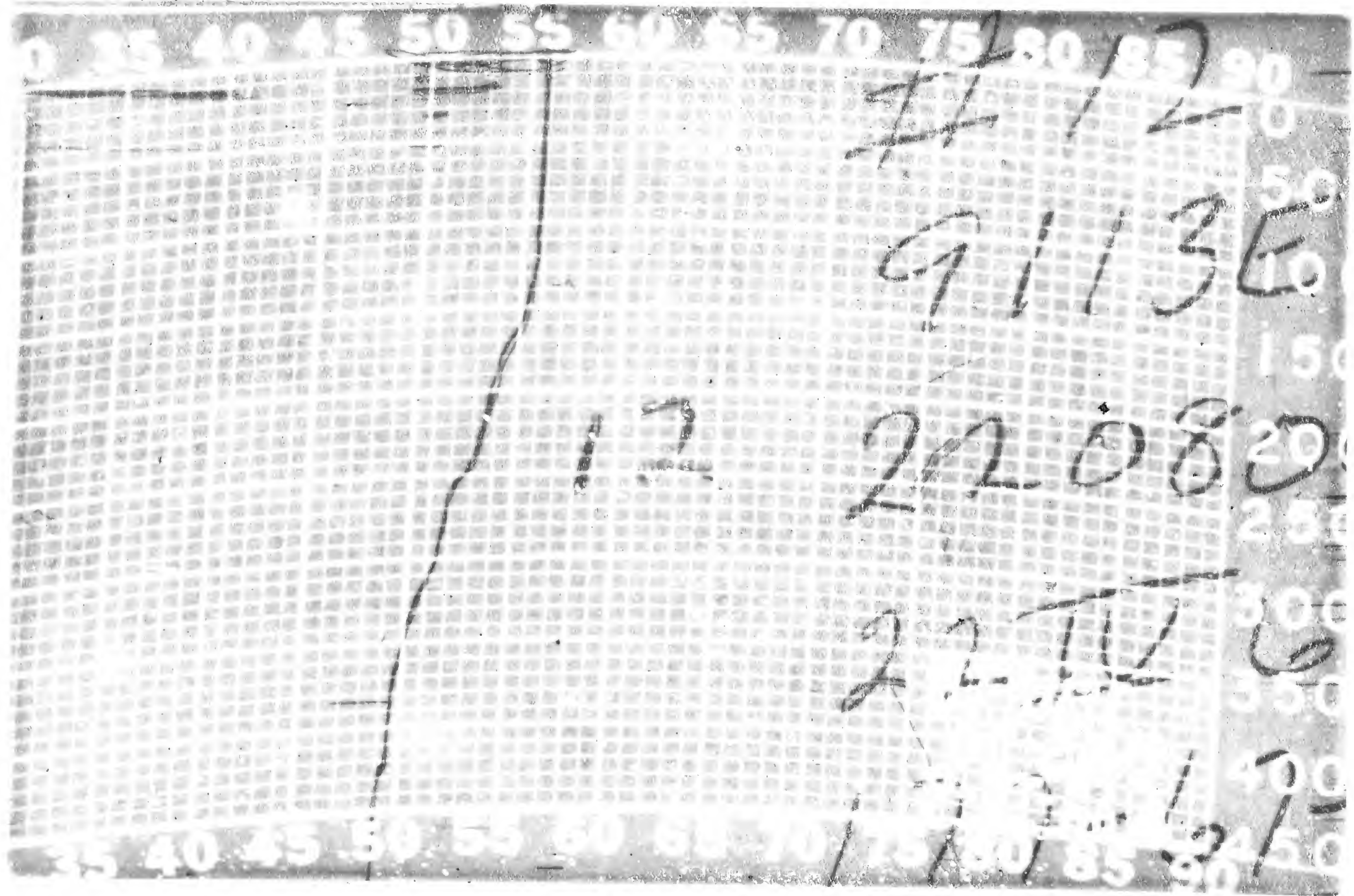
SIO NO 880 12 KEY 33122  
NODC NO 14893 CARD NO 12 GCT 0815 DATE IV-22-67  
VESSEL SHEARWATER  
LAT 33°18'N LONG 122°14'W DEPTH 2400 SPD —  
SURF T 56.03 WIND D 27 F 15 DRY T 54.0 WET T 50.0  
BAR 17 WEA 2 CL T 6 C 8 VIS — SEA 03'  
SWELL DIR HT PER  
TCS +2.33 DCS 0

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 880

13

KEY

33122

NODC NO 14893

CARD  
NO

13

GCT

1206

DATE

IV-22-67

VESSEL SHEARWATER

LAT 33°18' N

LONG 122°53' W

DEPTH 2480

SPD —

SURF T

—

WIND D

28 F 18

DRY T

55.0

WET T

50.0

BAR

17

WEA

1

CL T

6

C

3

VIS

—

SEA

05'

SWELL DIR

HT

PER

TCS

+2.3 B

DCS

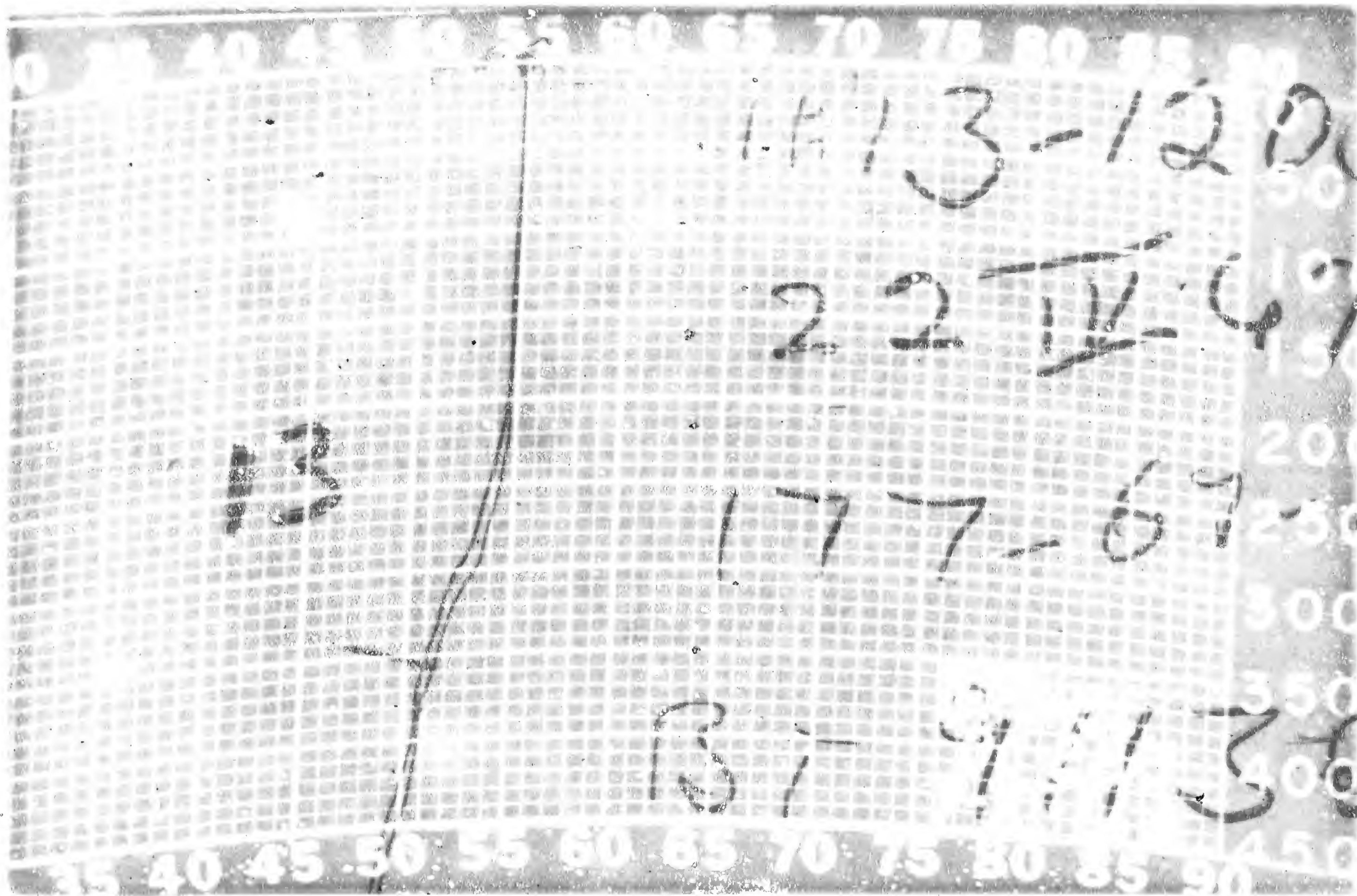
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MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6080 (REV 1956) Scripps Institution of Oceanography





13-120

22 IV 4

177-69

B7 9 11 13



SIO NO 880

14

KEY 33123

NODC NO 14893

CARD NO

14

GCT 0001

DATE IV-23-67

VESSEL SHEARWATER

LAT 33°20'N LONG 123°28'W

DEPTH 2480 SPD —

SURF T —

WIND D 99 F —

DRY T 60.0

WET T 53.0

BAR 23

WEA 1

CL T 3

C 2

VIS —

SEA 01'

SWELL DIR

HT

PER

TCS +2.3 B

DCS 0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 880 16 KEY 33124  
NODC NO 14893 CARD NO 15 GCT 0815 DATE IV-23-67  
VESSEL SHEARWATER  
LAT 33°20'N LONG 124°50'W DEPTH 2326 SPD —  
SURF T 56.53 WIND D 22 F 20 DRY T 57.0 WET T 54.0  
BAR 21 WEA 6 CL T 5 C 8 VIS — SEA 06'  
SWELL DIR HT PER  
TCS +2.3 B DCS 0

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUEL 606a (REV 1956) Scripps Institution of Oceanography





SIO NO 880 17 KEY 33125

NODC NO 14893 CARD NO 16 GCT 1205 DATE IV-23-67

VESSEL SHEARWATER

LAT 33°20'N LONG 125°21'W DEPTH 2560 SPD —

SURF T 56.5B WIND D 27 F 17 DRY T 58.0 WET T 55.0

BAR 18 WEA 1 CL T 3 C 5 VIS — SEA 05'

SWELL DIR HT PER

TCS +2.3B DCS 0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUEL 6060 (REV 1956) Scripps Institution of Oceanography

17-20-22

23 17-24

177-67-0

BT 9/13/50

35 40 45 50 55 60 65 70 75 80 85 90 95 100



SIO NO 880 18 KEY 33125  
NODC NO 14893 CARD NO 17 GCT 1623 DATE IV-23-67  
VESSEL SHEARWATER  
LAT 33°22'N LONG 125°52'W DEPTH 2500 SPD —  
SURF T 58.03 WIND D 27 F 14 DRY T 58.5 WET T 53.5  
BAR 18 WEA 6 CL T 5 C 7 VIS — SEA 05'  
SWELL DIR HT PER  
TCS +2.3B DCS 0

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

#18

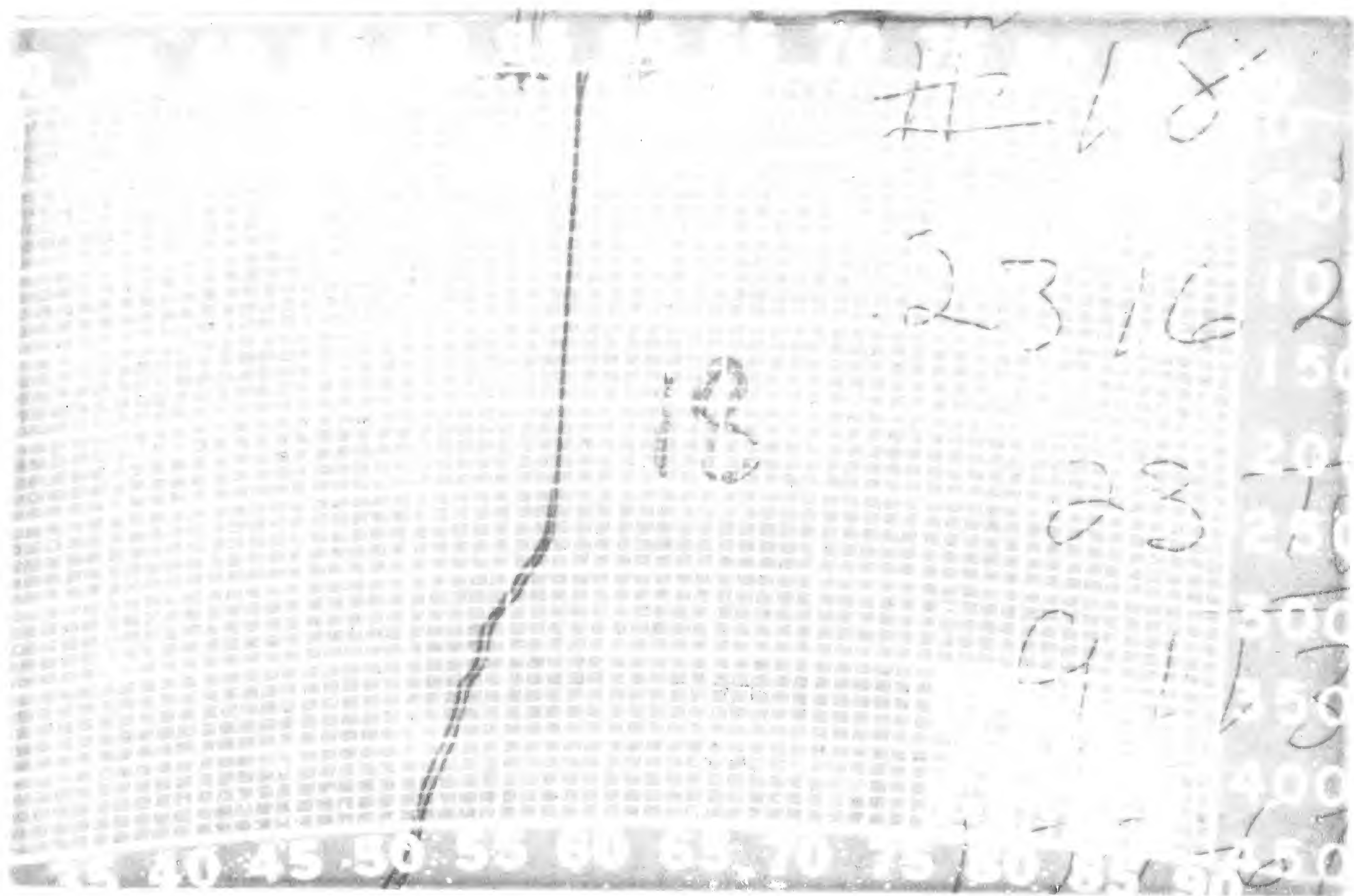
2316

18

23

91

30  
102  
150  
20  
250  
300  
350  
400  
500



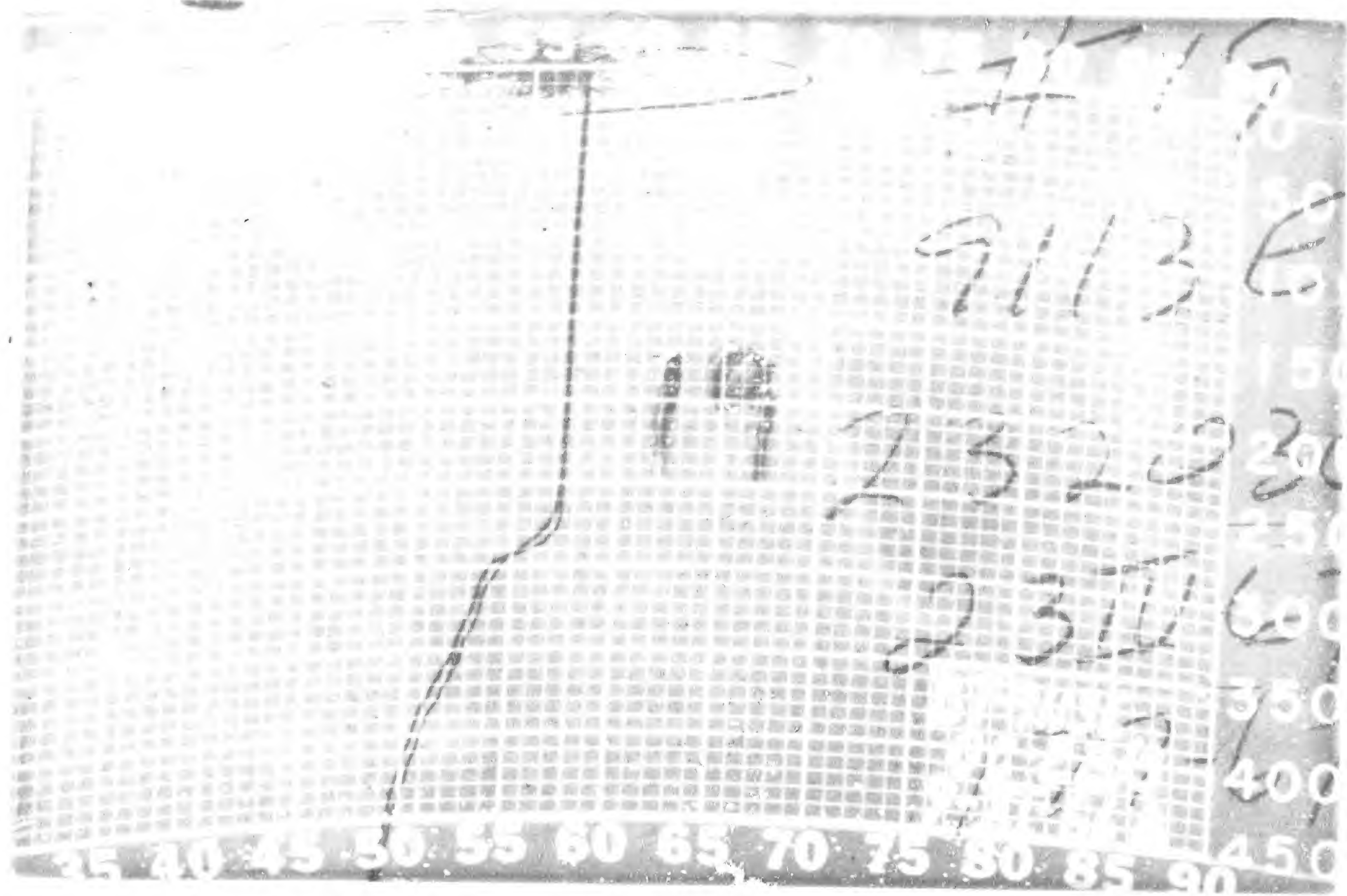


SIO NO 880 19 KEY 33126  
NODC NO 14893 CARD NO 18 GCT 2030 DATE IV-23-67  
VESSEL SHEARWATER  
LAT 33°02'N LONG 126°25'W DEPTH 2222 SPD —  
SURF T — WIND D 29 F 20 DRY T 57.0 WET T 54.0  
BAR 19 WEA 1 CL T 8 C 4 VIS — SEA 05'  
SWELL DIR HT PER  
TCS +2.3B DCS 0

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 880 20 KEY 32126  
NODC NO 14893 CARD NO 19 GCT 0005 DATE IV-24-67  
VESSEL SHEARWATER  
LAT 32°40'N LONG 126°21'W DEPTH 2395 SPD —  
SURF T 58.5B WIND D 31 F 17 DRY T 59.0 WET T 54.0  
BAR 20 WEA 1 CL T 8 C 3 VIS — SEA 05'  
SWELL DIR HT PER  
TCS +2.3B DCS 0

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography.

20

20-00

24 IV 1967

177-67

0-00

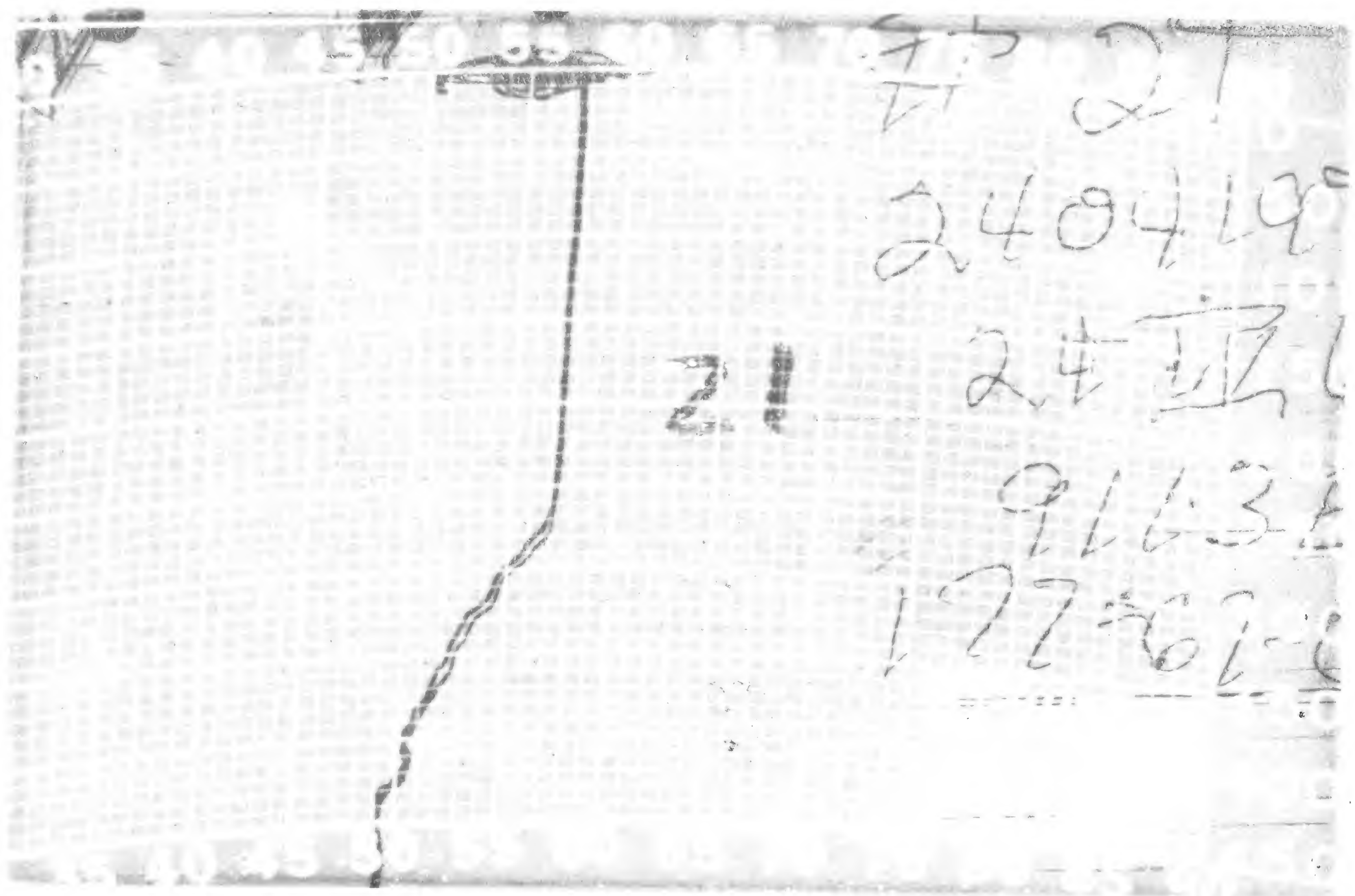


SIO NO 880 2i KEY 32125  
NODC NO 14893 CARD NO 20 GCT 0419 DATE IV-24-67  
VESSEL SHEARWATER  
LAT 32°39'N LONG 125°48'W DEPTH 2020 SPD -  
SURF T - WIND D 32 F 15 DRY T 59.0 WET T 53.0  
BAR 21 WEA 1 CL T 8 C 4 VIS - SEA 04'  
SWELL DIR HT PER  
TCS +2.3 B DCS 0

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



21  
240419  
24 1/2  
916.3  
177 1/2



SIO NO 880 22 KEY 32125  
NODC NO 14893 CARD NO 21 GCT 0820 DATE IV-24-67  
VESSEL SHEARWATER  
LAT 32°38'N LONG 125°05'W DEPTH 2202 SPD —  
SURF T 58.03 WIND D 32 F 12 DRY T 58.0 WET T 54.0  
BAR 22 WEA 1 CL T 9 C 4 VIS — SEA 04'  
SWELL DIR HT PER  
TCS +2.3 B DCS 0

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

# 2.2

91136

24082

217126

1-15700

4-42



40 45 50 55 60 65 70 75 80 85 90 95



SIO NO 880

23

KEY

32124

NODC NO 14893

CARD  
NO

22

GCT

1215

DATE

IV-24-67

VESSEL

SHEARWATER

LAT

32°28'N

LONG

124°19'W

DEPTH

2560

SPD

—

SURF T

—

WIND D

33

F

16

DRY T

57.0

WET T

54.0

BAR

22

WRA

1

CL T

8

C

3

VIS

—

SEA

05'

SWELL DIR

HT

PER

TCS

+2.3 B

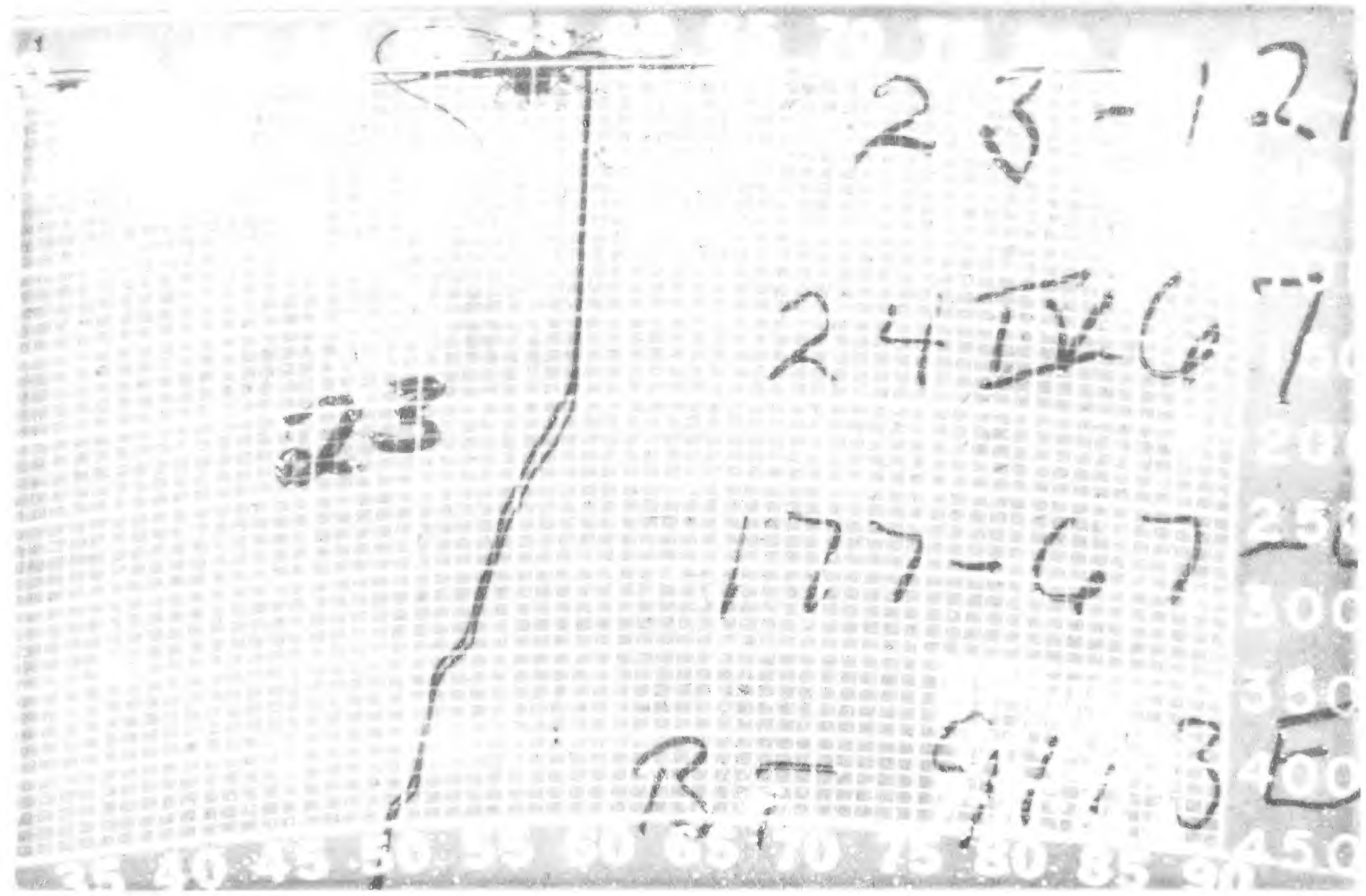
DCS

0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



23-12.1

24 IX 67

177-67

R-9113

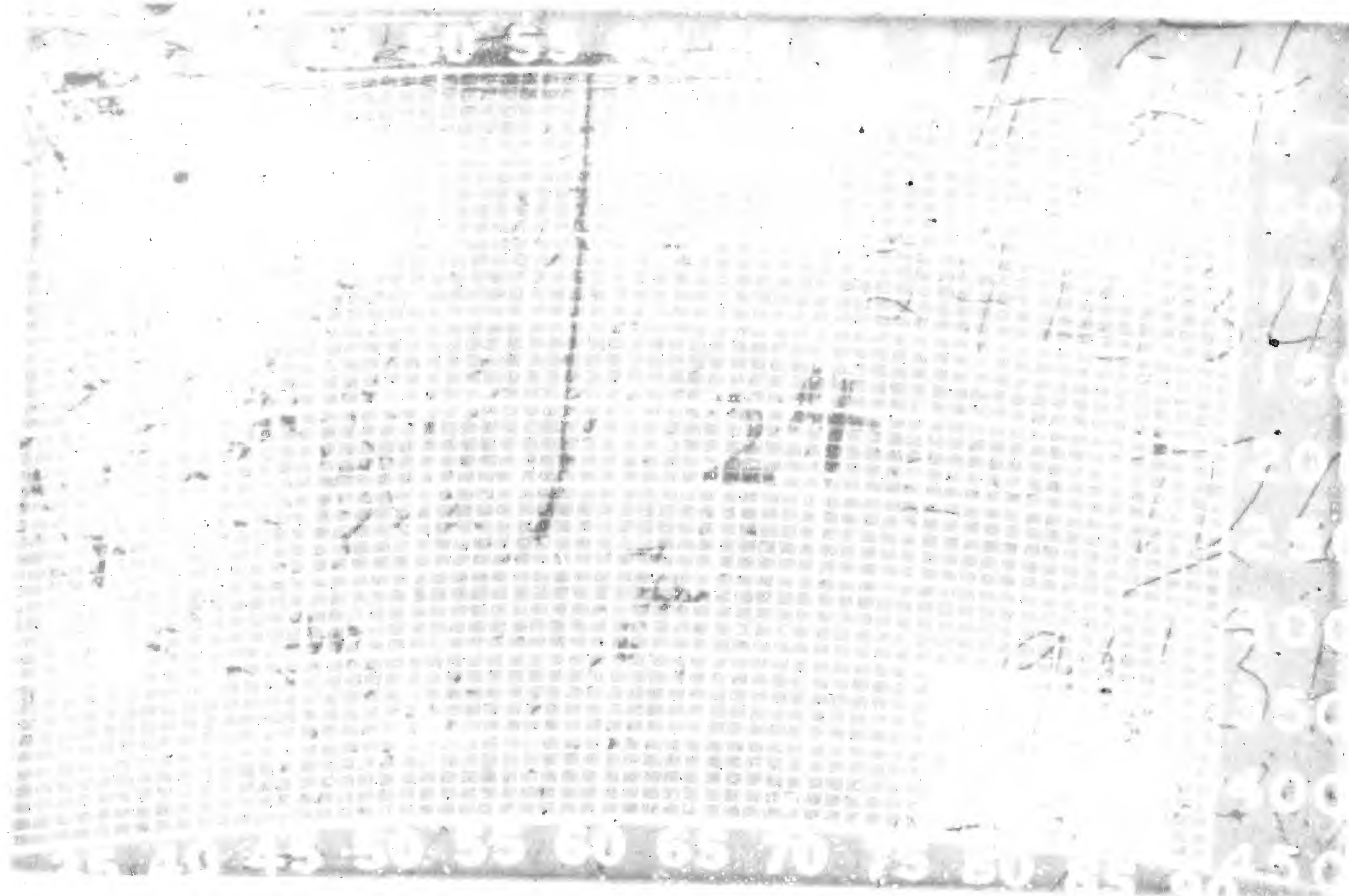


SIO NO 880 24 KEY 32123  
NODC NO 14893 CARD NO 23 GCT 1635 DATE IV-24-67  
VESSEL SHEARWATER  
LAT 32°28'N LONG 123°36'W DEPTH 2040 SPD —  
SURF T — WIND D 33 F 17 DRY T 59.5 WET T 54.0  
BAR 24 WEA 1 CL T 8 C 3 VIS — SEA 06'  
SWELL DIR HT PER  
TCS +2.3 B DCS 0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 880

25

KEY 32122

NODC NO 14893 CARD NO 24

GCT 2030

DATE IV-24-67

VESSEL SHEARWATER

LAT 32°23'N LONG 122°55'W DEPTH 2100 SPD -

SURF T 58.0B WIND D 35 F 17 DRY T 61.0 WET T 55.0

BAR 25 WEA 1 CL T 8 C 3 VIS - SEA 05'

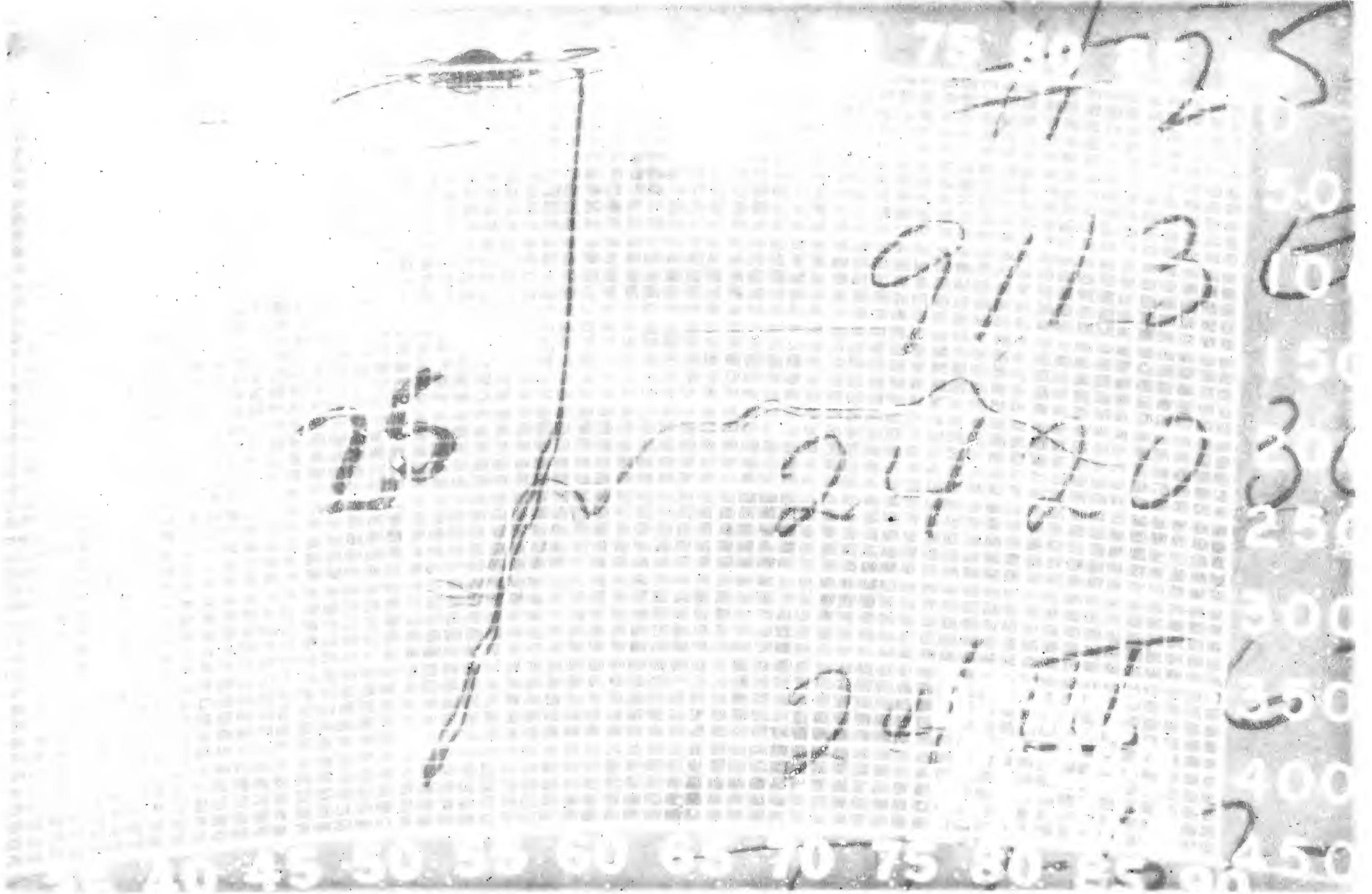
SWELL DIR HT PER

TCS +2.3B DCS 0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIC NO 880

26

KEY

32122

NODC NO 14893

CARD  
NO

25

GCT

0006

DATE

IV-25-67

VESSEL

SHEARWATER

LAT

32°26'N

LONG

122°21'W

DEPTH

2400

SPD

—

SURF T

58.0 B

WIND D

33

F

17

DRY T

65.0

WET T

57.0

BAR

24

WEA

1

CL T

8

C

2

VIS

—

SEA

05'

SWELL DIR

HT

PER

TCS

+2.3 B

DCS

0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography

26

26-000

26

25 12 4 7

177-67

27 9 11

40 45 50 55 60 65 70 75 80 85 90 95 100

20  
25  
30  
35  
40  
45



SIO NO 880

NODC NO 14893 CARD NO

26

GCT 0419

KEY

32121

DATE IV-25-67

VESSEL SHEARWATER

LAT 32°27'N LONG 121°30'W

DEPTH 2000 SPD —

SURF T — WIND D 34 F 16 DRY T 59.0 WET T 55.0

BAR 25 WEA 1 CL T 8 C 3 VIS — SEA 06'

SWELL DIR HT PER

TCS +2.3B DCS 0

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography

# 27

27

25 Oct 19

25 IV 6

9.11 3.15

4.00  
7.50



SIO NO 877

1

KEY

34126

NODC NO 14890 CARD NO /

GCT

1730

DATE

II-23-67

VESSEL SHEARWATER

LAT 34°47' N LONG 126°25' W DEPTH 2560 SPD

SURF T 58.0 B WIND D 03 F 08 DRY T 55.0 WET T 52.0

BAR 19 WEA 2 CL T 7 C 8 VIS SEA 14'

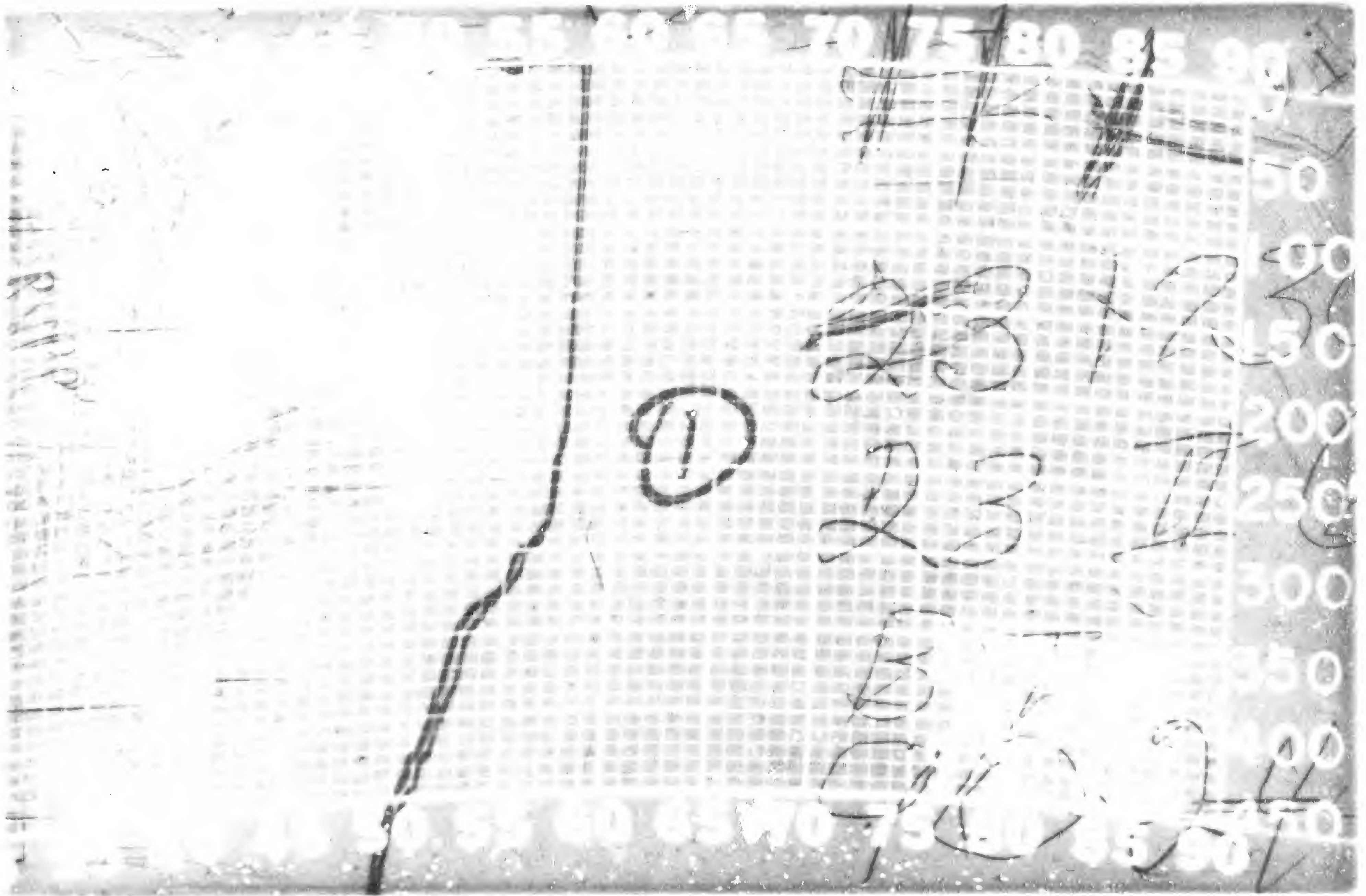
SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 2 KEY 34125  
NODC NO 14890 CARD NO 2 GCT 0045 DATE II-24-67

VESSEL SHEARWATER

LAT 34°14' N LONG 125°50' W DEPTH 2600 SPD

SURF T WIND D 06 F 05 DRY T 66.0 WET T 59.0

BAR 16 WEA 1 CL T 3 C 5 VIS SEA 04'

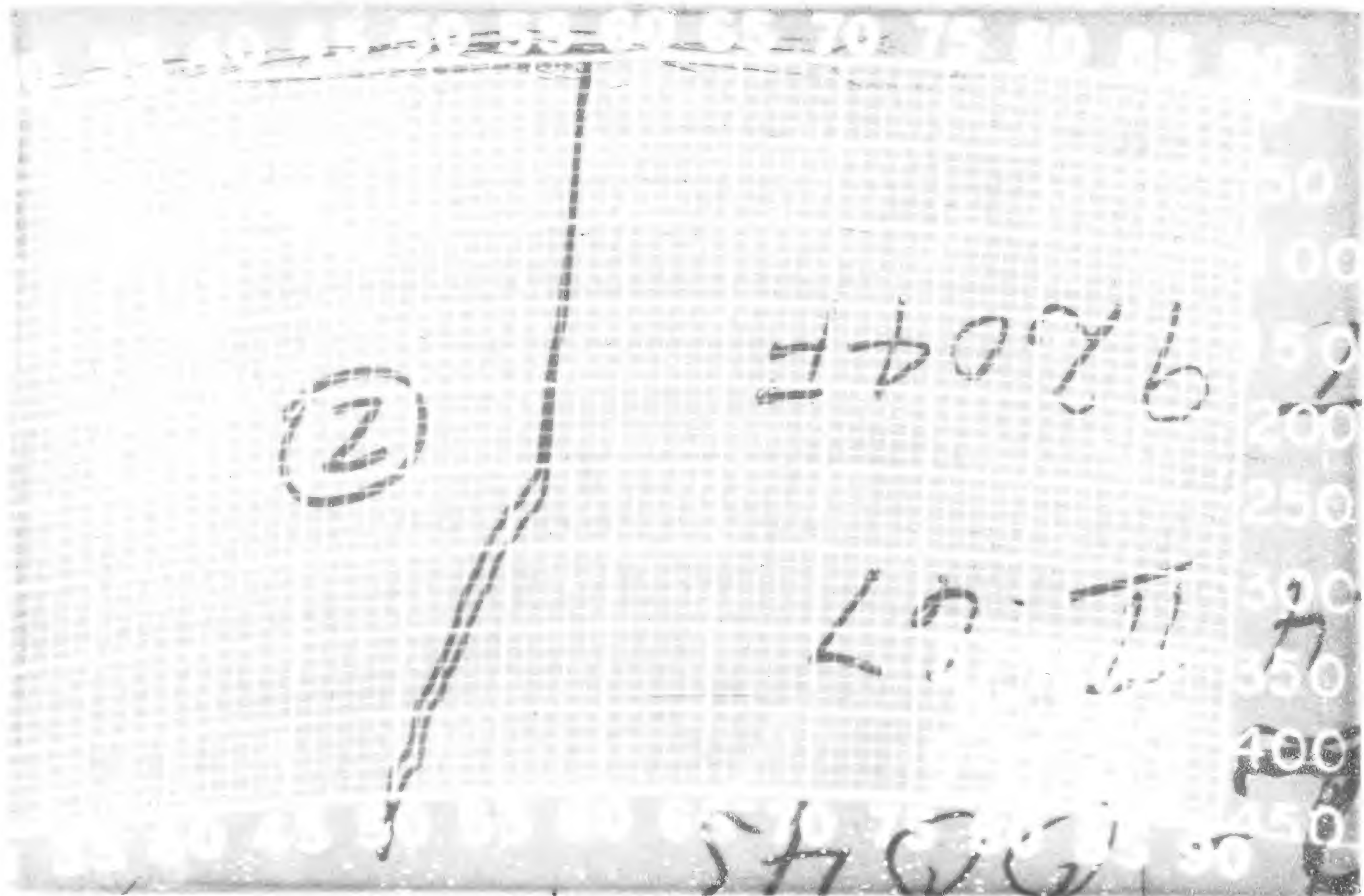
SWELL DIR HT PER

TCS -0.23 DCS 0

MAY 22 1967

VMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 3 KEY 34125

NODC. NO 14890 CARD NO 3 GCT 0430 DATE II-24-67

VESSEL SHEAR WATER

LAT 34°06' N LONG 125°16' W DEPTH 2550 SPD

SURF T WIND D 00 F 00 DRY T 54.0 WET T 52.0

BAR 16 WEA 1 CL T 8 C 3 VIS SEA 00'

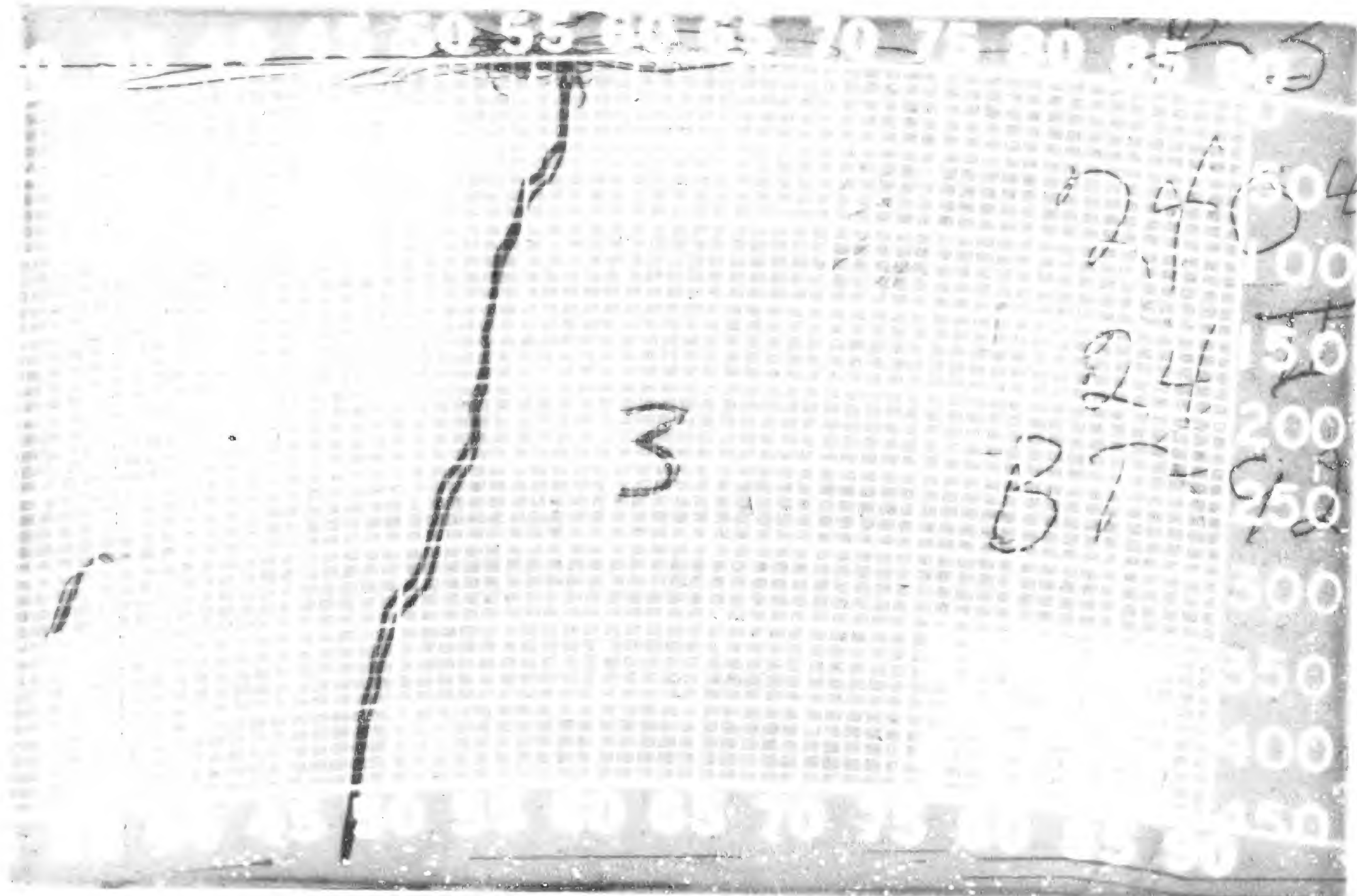
SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 4 KEY 34124  
NODC NO 14890 CARD NO 4 GCT 0836 DATE II-24-67  
VESSEL SHEARWATER  
LAT 34° 07' N LONG 124° 37' W DEPTH 2408 SPD  
SURF T WIND D 09 F 04 DRY T 56.0 WET T 54.0  
BAR 16 WEA 1 CL T 8 C 3 VIS SEA 00'  
SWELL DIR HT PER  
TCS -0.2B DCS 0

MAY 22 1967

VMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

— 0254

47

920415

6-11-4



SIO NO **877** 5 KEY **34123**  
NODC NO **14890** CARD NO **5** OCT **1220** DATE **II-24-67**  
VESSEL **SHEARWATER**  
LAT **34°05' N** LONG **123°47' W** DEPTH **2500** SPD  
SURF T **56.0 B** WIND D **09** F **02** DRY T **54.0** WET T **52.0**  
BAR **14** WEA **1** CL T **4** C **7** VIS **SEA 02'**  
SWELL DIR HT PER  
TCS **-0.2 B** DCS **0**

**MAY 22 1967**

**WMO Codes Used**

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography

#5-12

24-II-6

5

BT-9204

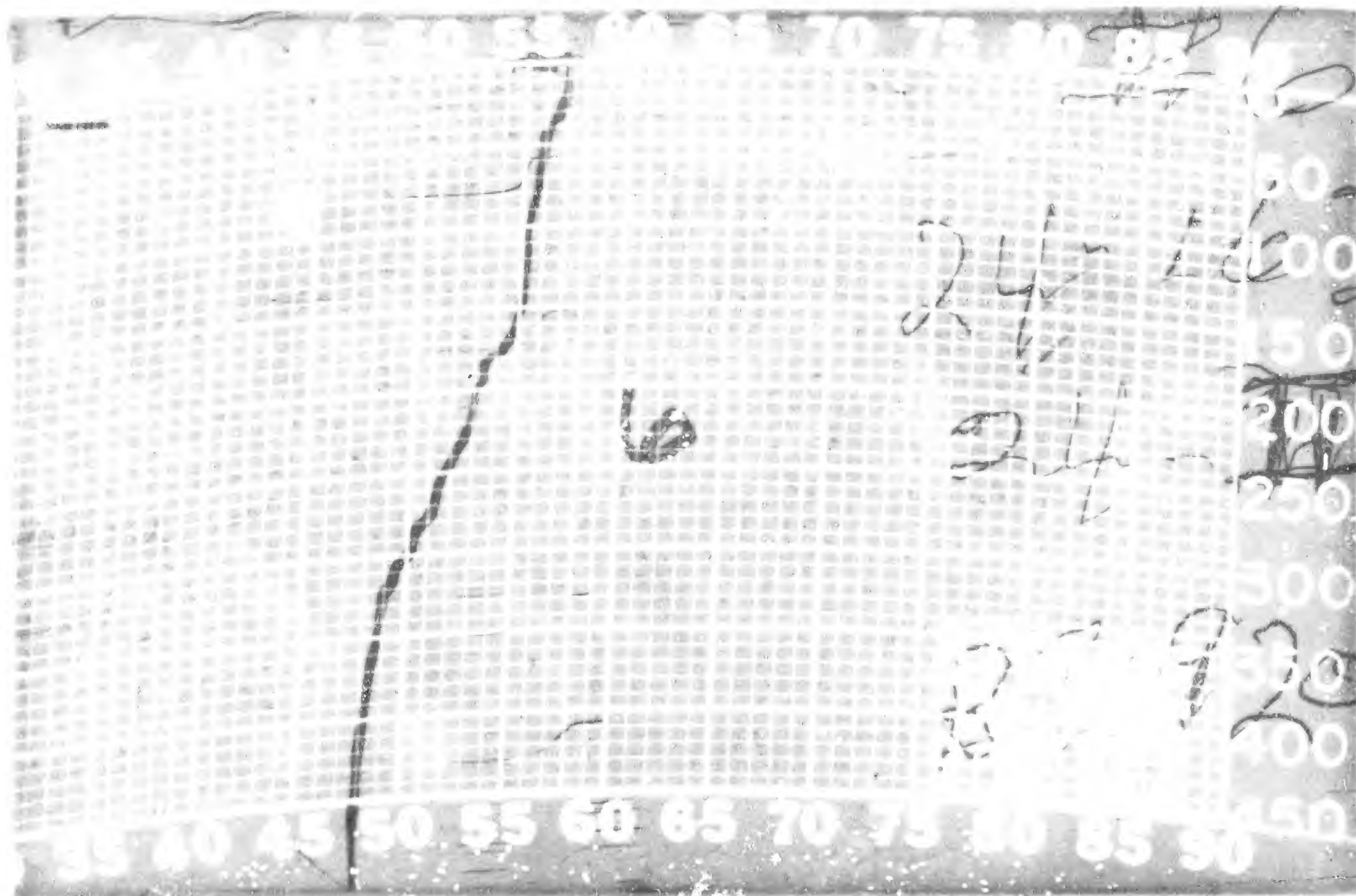


SIO NO 877 6 KEY 34122  
NODC NO 14890 CARD NO 6 GCT 1636 DATE II-24-67  
VESSEL SHEARWATER  
LAT 34°10' N LONG 122°50' W DEPTH 2400 SPD  
SURF T 56.5 B WIND D 24 F 10 DRY T 56.0 WET T 54.0  
BAR 15 WRA 2 CL T 7 C 8 VIS SEA 04'  
SWELL DIR HT PER  
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 7 KEY 34122  
NODC NO 14890 CARD NO 7 OCT 2027 DATE II-24-67

VESSEL SHEARWATER

LAT 34° 10' N LONG 122° 09' W DEPTH 2060 SPD

SURF T 56.0 B WIND D 24 F 10 DRY T 57.0 WET T 55.0

BAR 15 WEA 2 CL T 7 C 8 VIS SEA 04'

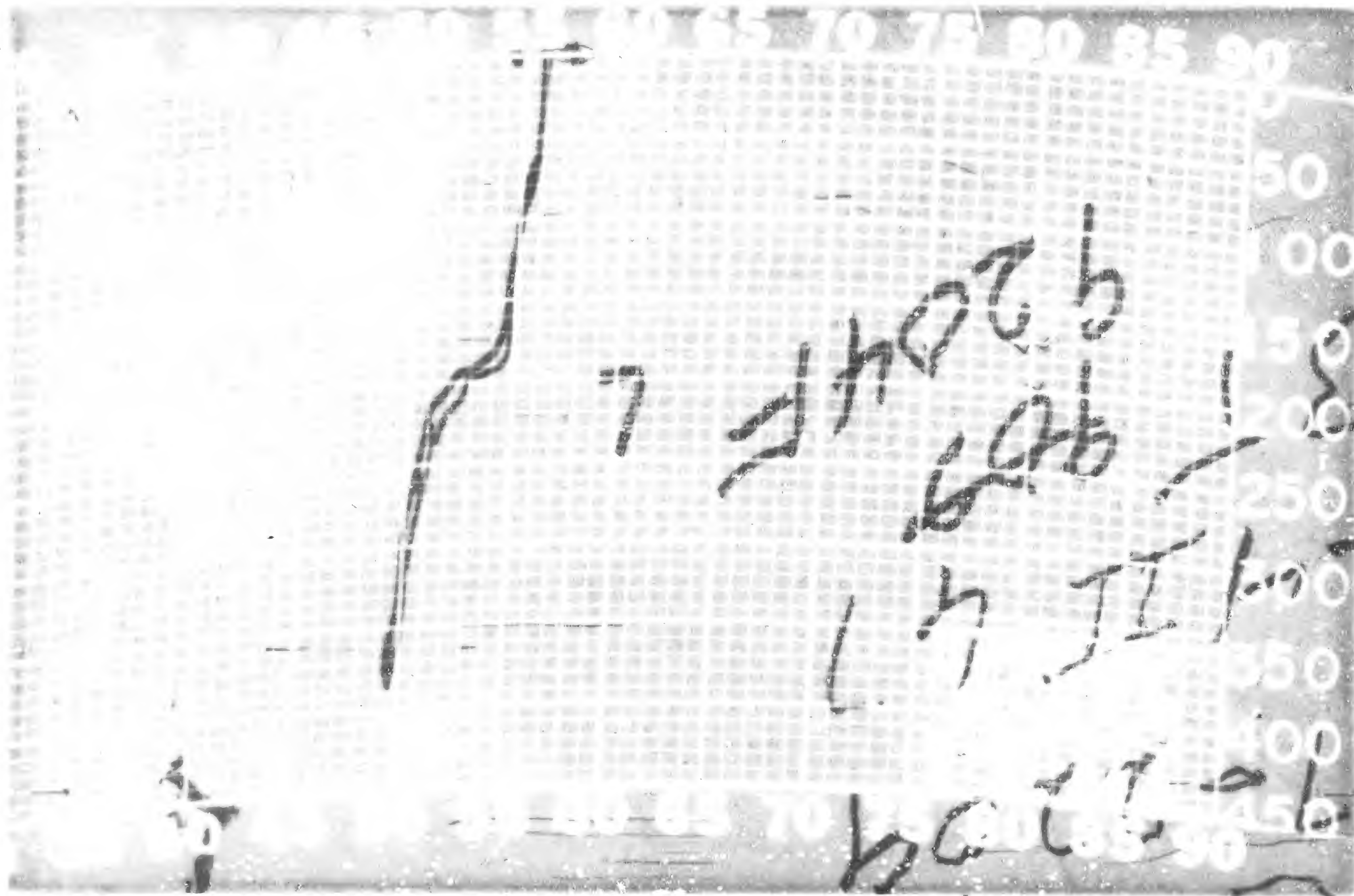
SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 8 KEY 34121  
NODC NO 14890 CARD NO 8 GCT 0028 DATE II-25-67

VESSEL SHEARWATER

LAT 34° 06' N LONG 121° 00' W DEPTH 1599 SPD

SURF T WIND D 24 F 0.9 DRY T 54.0 WET T 52.0

BAR 15 WEA 6 CL T S C 8 VIS SEA 04'

SWELL DIR HT PER

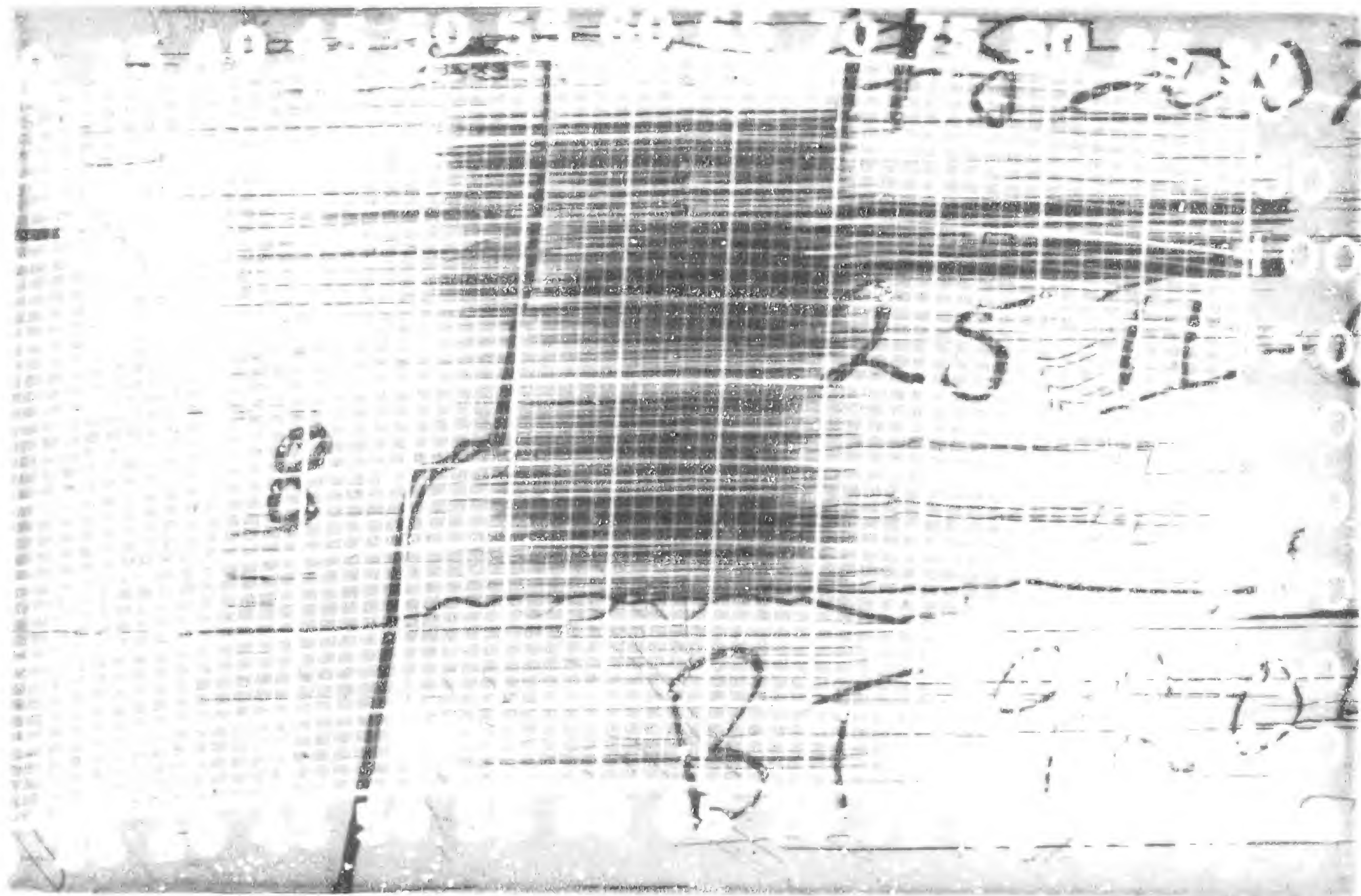
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 877

9

KEY

33121

NODC NO 14890

CARD  
NO

9

GCT 0427

DATE II-25-67

VESSEL SHEARWATER

LAT 33° 25' N LONG 121° 20' W DEPTH 2000 SPD

SURF T 56.0 B WIND D 18 F 13 DRY T 54.0 WET T 52.0

BAR 17 WEA 1 CL T 4 C 3 VIS SEA 04'

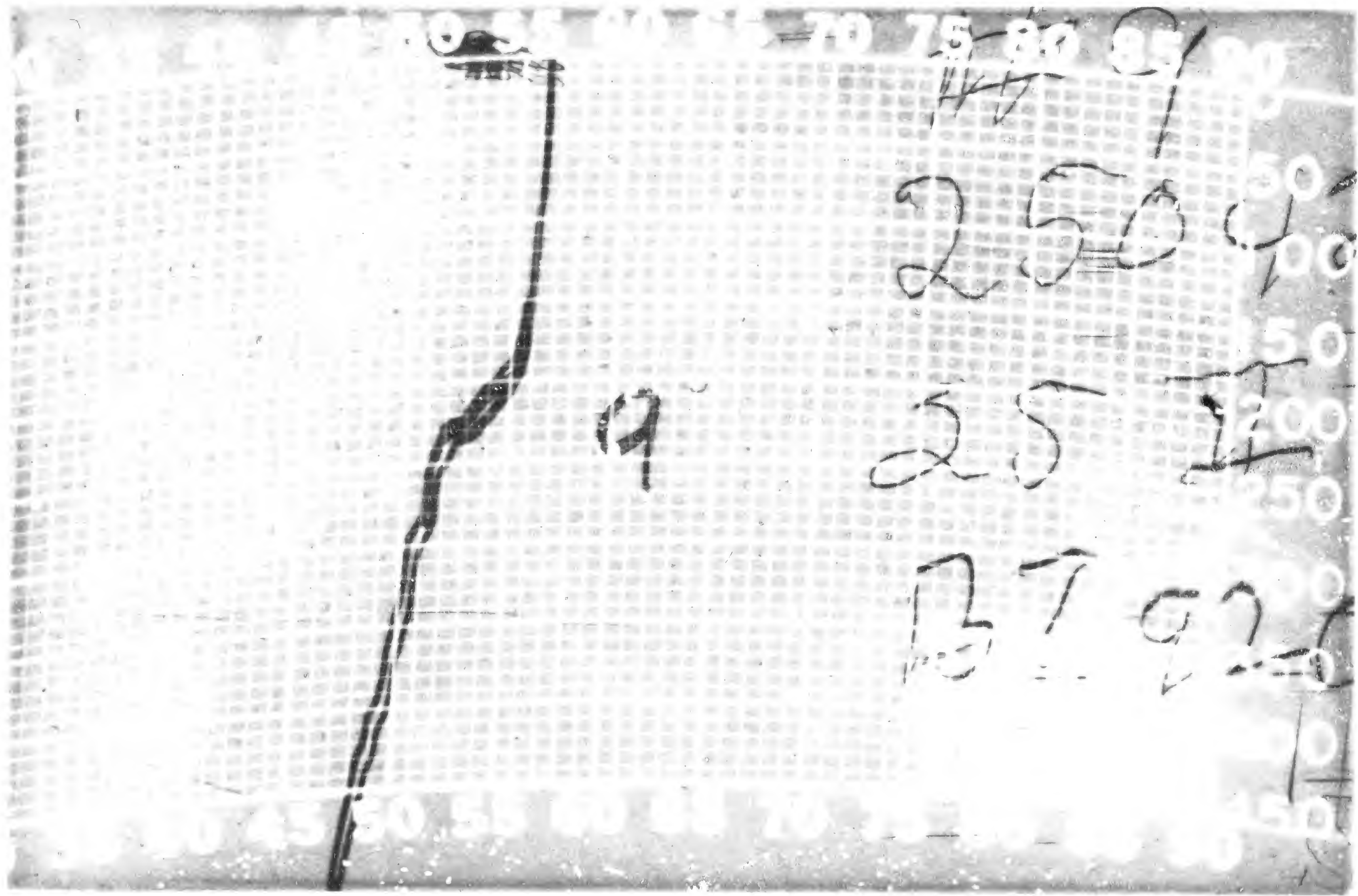
SWELL DIR HT PER

TCS -0.2 B DOS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 10 KEY 33122

NODC NO 14890 CARD NO 10 GCT 0829 DATE II-25-67

VESSEL SHEARWATER

LAT 33°20' N LONG 122°03' W DEPTH 2080 SPD

SURF T WIND D 28 F 13 DRY T 54.0 WET T 52.0

BAR 17 WRA — CL T 6 C 7 VIS SEA 04'

SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







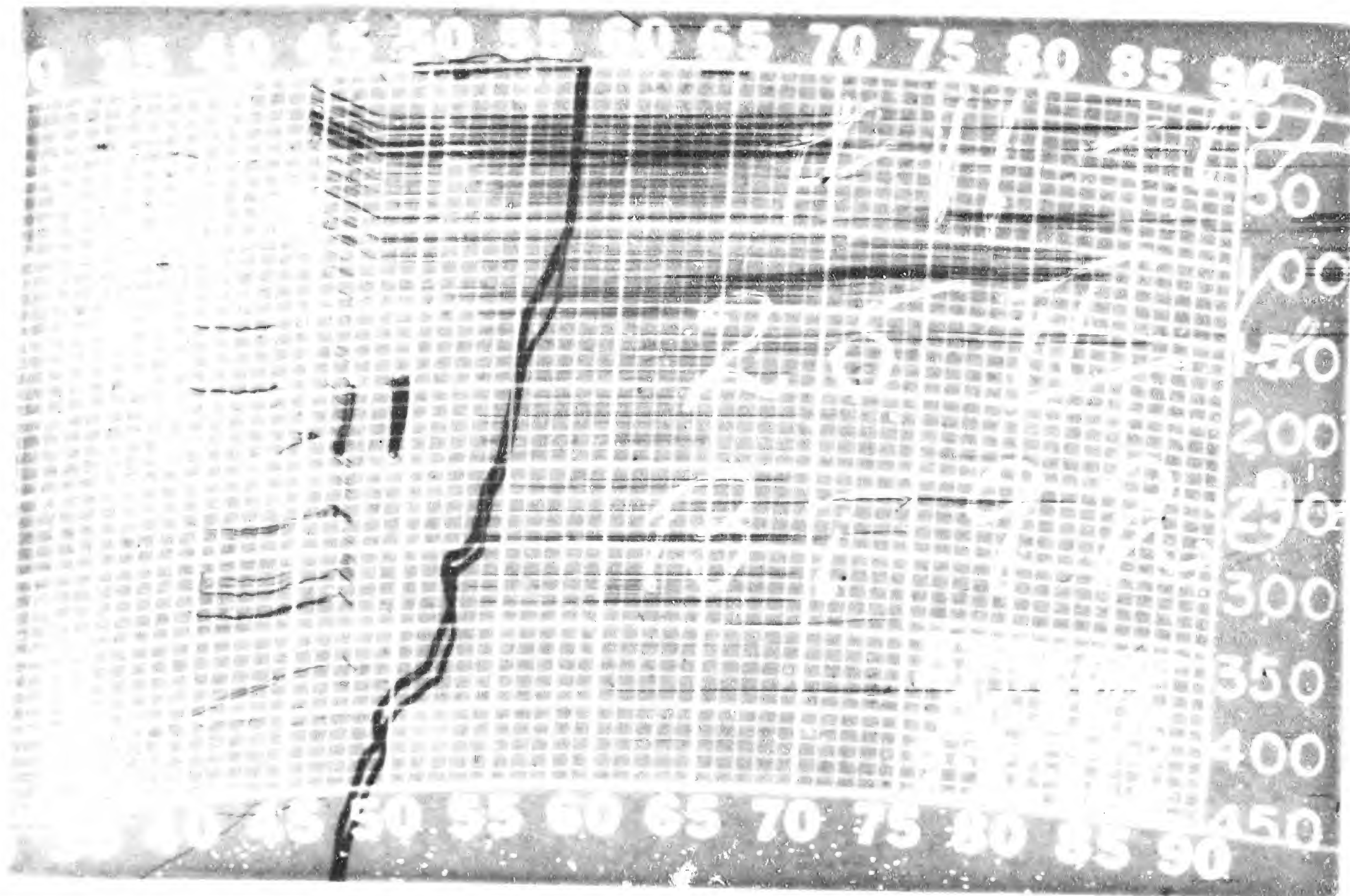
SIO NO **877** KEY **33123**  
NODC NO **14890** CARD NO **11** GCT **1223** DATE **II-25-67**  
VESSEL **SHEARWATER**  
LAT **33°20' N** LONG **123°47' W** DEPTH **2480** SPD  
SURF T WIND D **31** F **20** DRY T **56.0** WET T **52.0**  
BAR **18** WEA **1** CL T **8** C **5** VIS **12**  
SWELL DIR HT PER  
TCS **-0.2 B** DCS **0**

**MAY 22 1967**

**WMO Codes Used**

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 877 12 KEY 33123  
NODC NO 14890 CARD NO 12 GCT 1632 DATE II-25-67

VESSEL SHEARWATER

LAT 33°16' N LONG 123°22' W DEPTH 2285 SPD

SURF T WIND D 34 F 16 DRY T 53.0 WET T 51.0

BAR 23 WEA 1 CL T 3 C 6 VIS SEA 12'

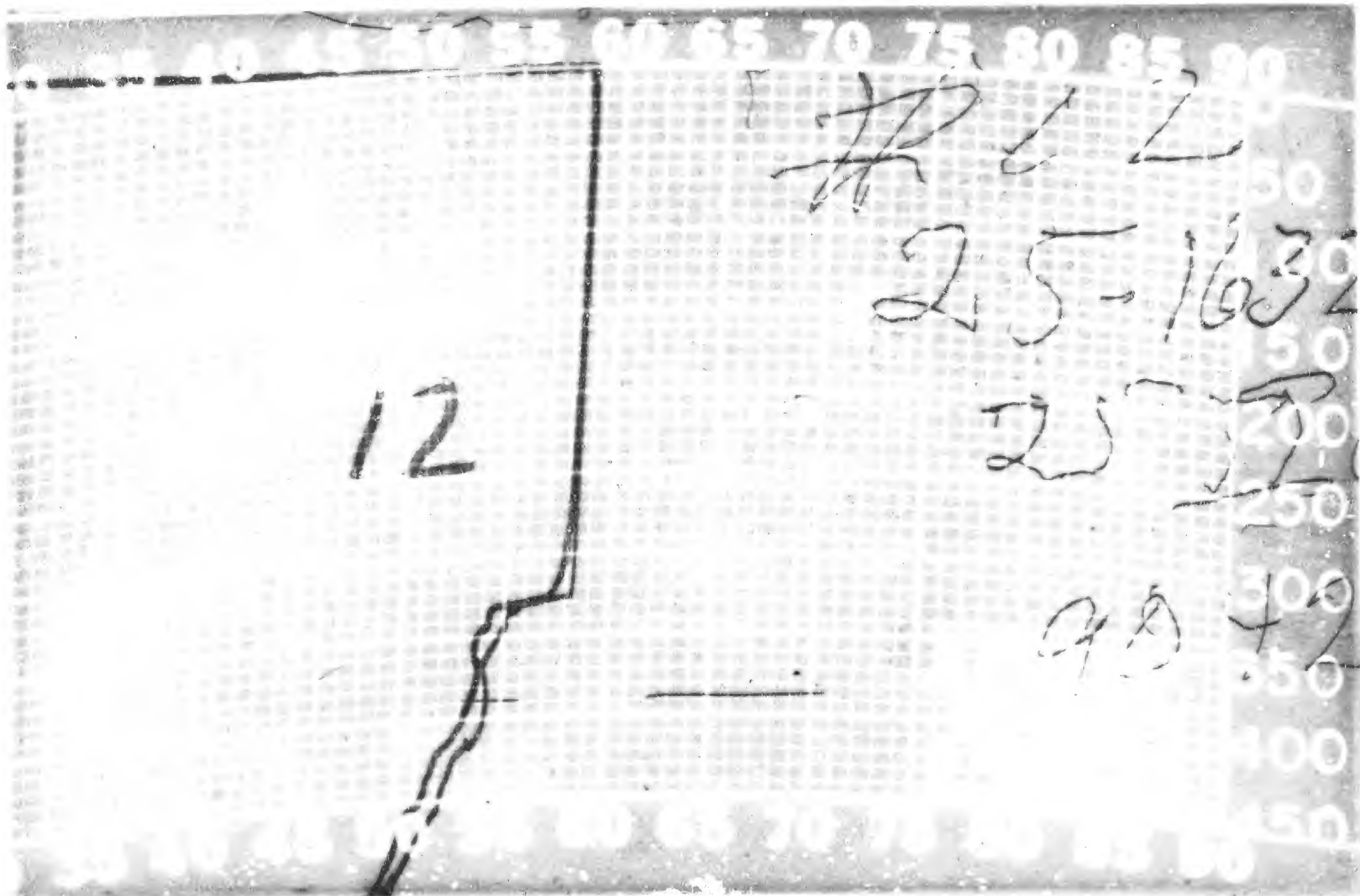
SWELL DIR HT PER

TCS -0.25 DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 13 KEY 33123  
NODC NO 14890 CARD NO 13 OCT 2050 DATE II-25-67  
VESSEL SHEARWATER  
LAT 33° 17' N LONG 123° 57' W DEPTH 2560 SPD  
SURF T WIND D 35 F 17 DRY T 53.0 WET T 52.0  
BAR 24 WEA 2 CL T - C - VIS SEA 12'  
SWELL DIR HT PER  
TCS -0.23 DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

#13-21

25 IL 16

BT 920

13



SIC NO 877 14 KEY 33124

NODC NO 14890 CARD NO 14 GCT 0002 DATE II-26-67

VESSEL SHEARWATER

LAT 33°16' N LONG 124°49' W DEPTH 2326 SPD

SURF T 58.0 B WIND D 35 F 18 DRY T 54.0 WET T 52.0

BAR 23 WEA 1 CL T 3 C 3 VIS SEA 14'

SWELL DIR HT PER

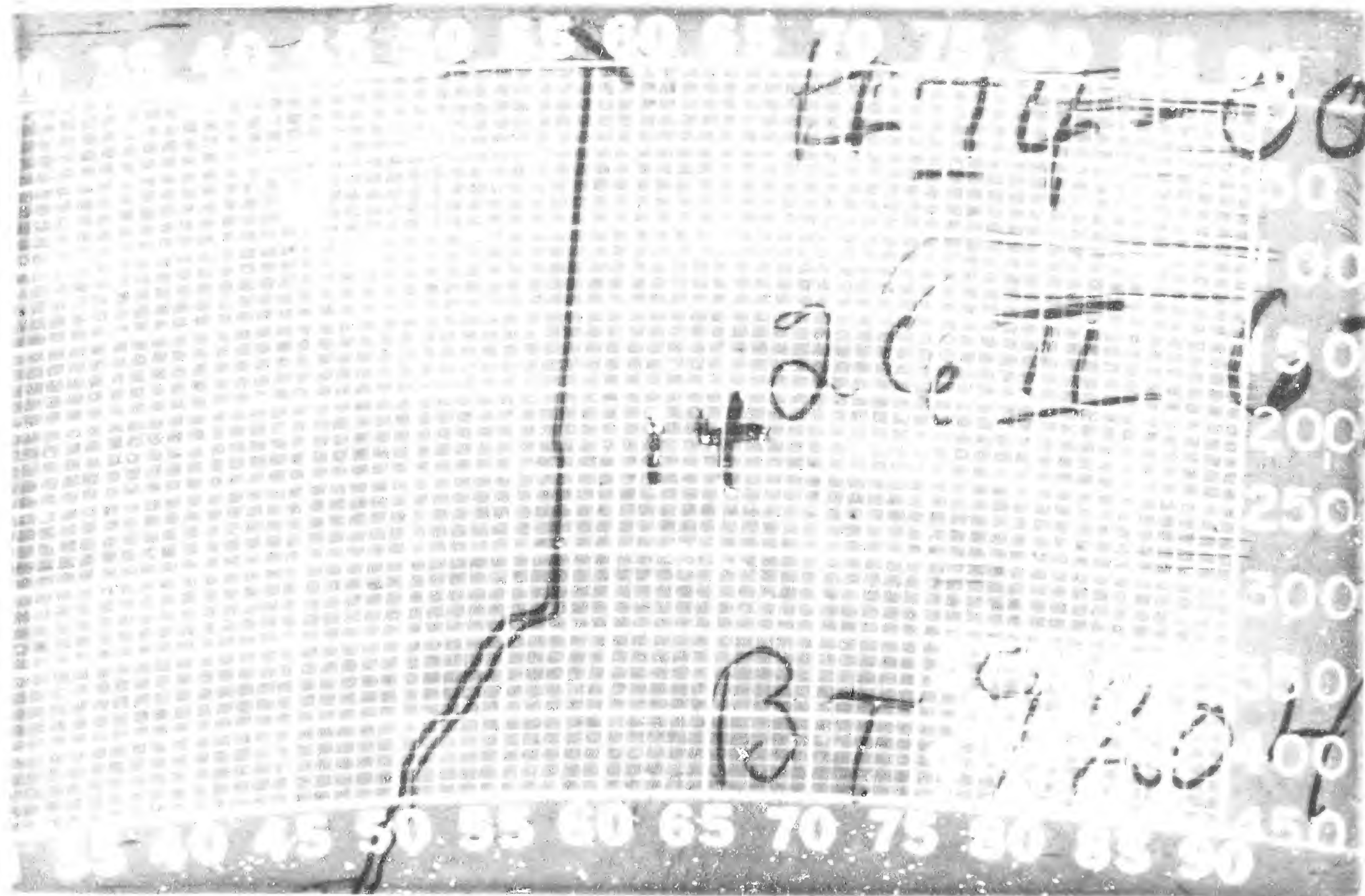
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 877 15 KEY 33125  
NODC NO 14890 CARD NO 15 GCT 0425 DATE II-26-67

VESSEL SHEARWATER

LAT 33° 19' N LONG 125° 31' W DEPTH 2640 SPD

SURF T WIND D 01 F 18 DRY T 53.0 WET T 50.0

BAR 26 WEA 1 CL T 8 C 3 VIS SEA 08'

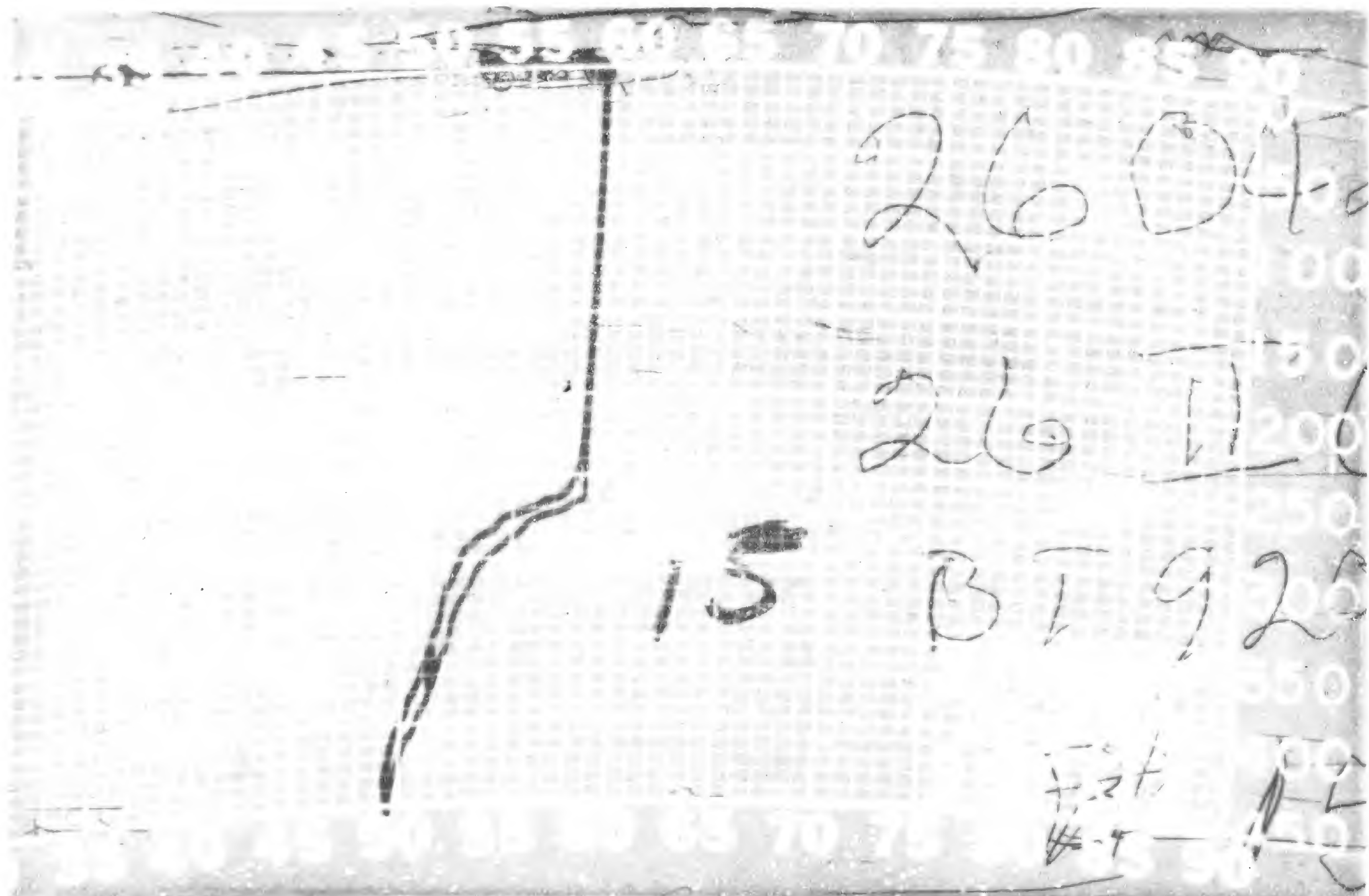
SWELL DIR HT PER

TCS -0.23 DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



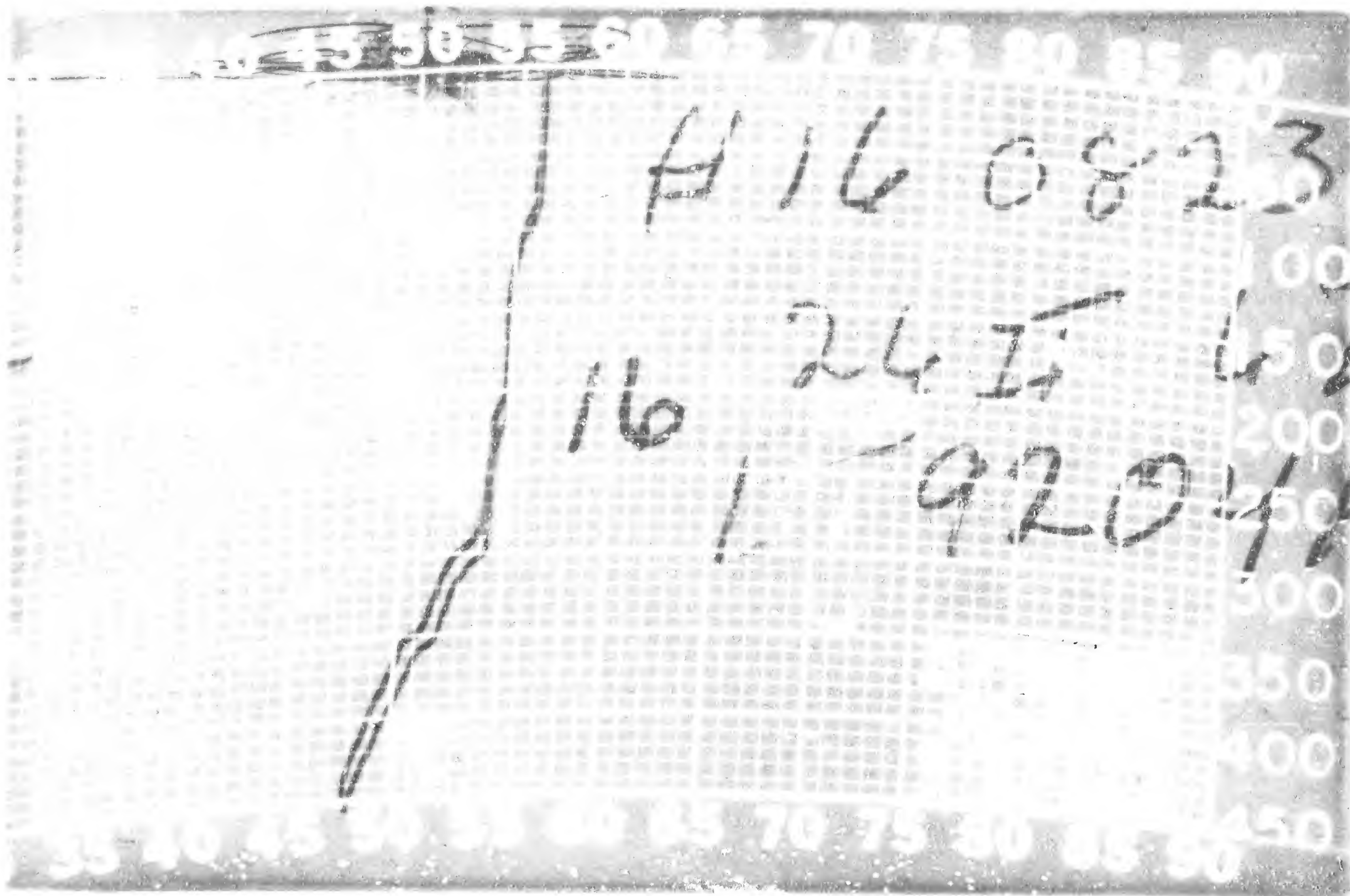


SIO NO 877 16 KEY 33126  
NODC NO 14890 CARD NO 16 GCT 0823 DATE II-26-67  
VESSEL SHEARWATER  
LAT 33°19' N LONG 126°26' W DEPTH 2430 SPD  
SURF T WIND D 09 F 12 DRY T 53.0 WET T 50.0  
BAR 27 WEA 1 CL T 8 C 4 VIS SEA 06'  
SWELL DIR HT PER 1  
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 17 KEY 32126

NODE NO 14890 CARD NO 17 GUT 1205 DATE II-26-67

VESSEL SHEARWATER

LAT 32° 43' N LONG 126° 26' W DEPTH 2393 SPD

SURF T 56.0 B WIND D 99 F 05 DRY T 54.0 WET T 50.0

BAR 16 WEA 2 CL T 6 C 8 VIS SEA 05'

SWELL DIR HT PER

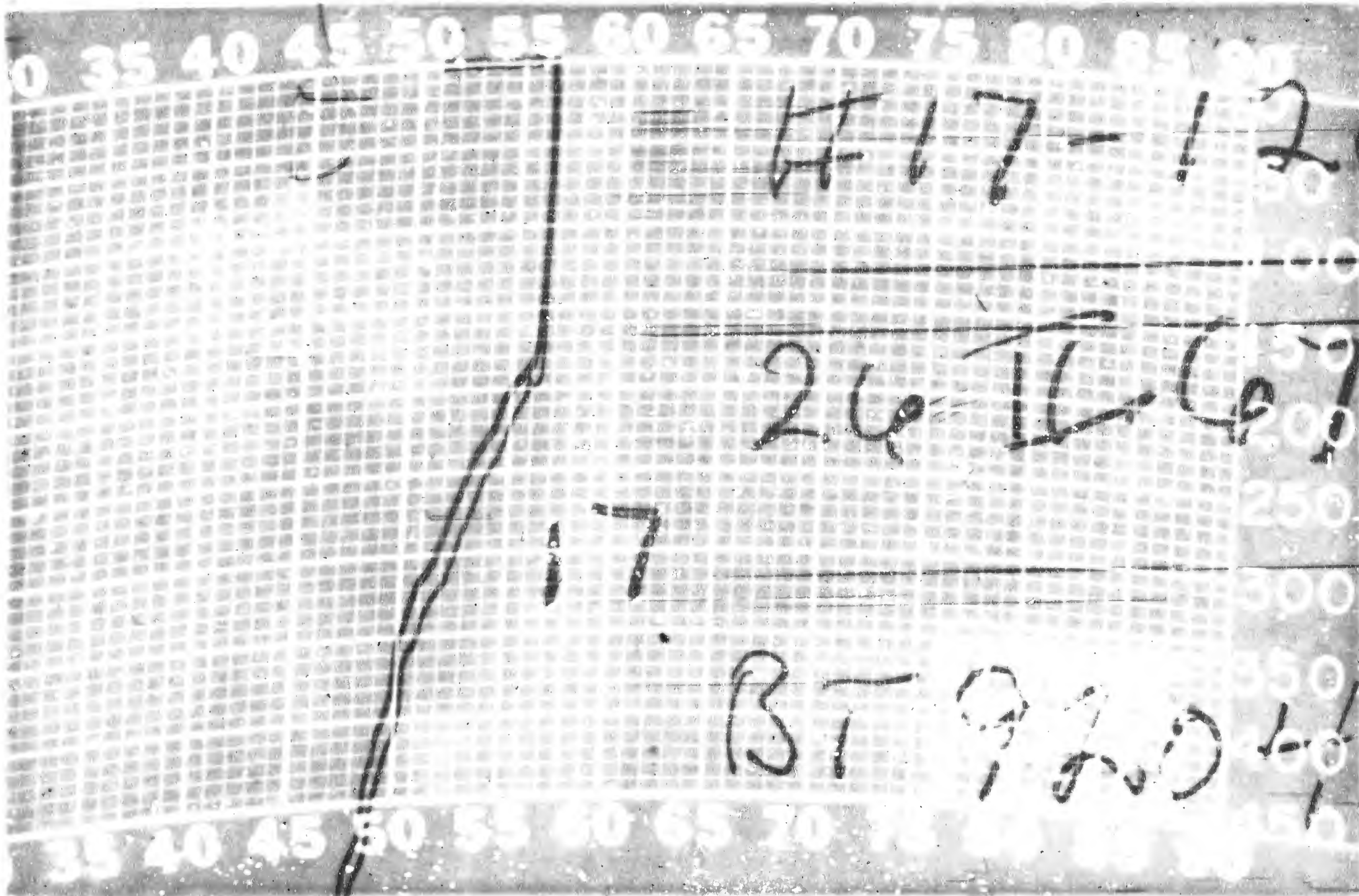
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 877 17 KEY 32126

NODE NO 14890 CARD NO 17 GUT 1205 DATE II-26-67

VESSEL SHEARWATER

LAT 32° 43' N LONG 126° 26' W DEPTH 2393 SPD

SURF T 56.0 B WIND D 99 F 05 DRY T 54.0 WET T 50.0

BAR 16 WEA 2 CL T 6 C 8 VIS SEA 05'

SWELL DIR HT PER

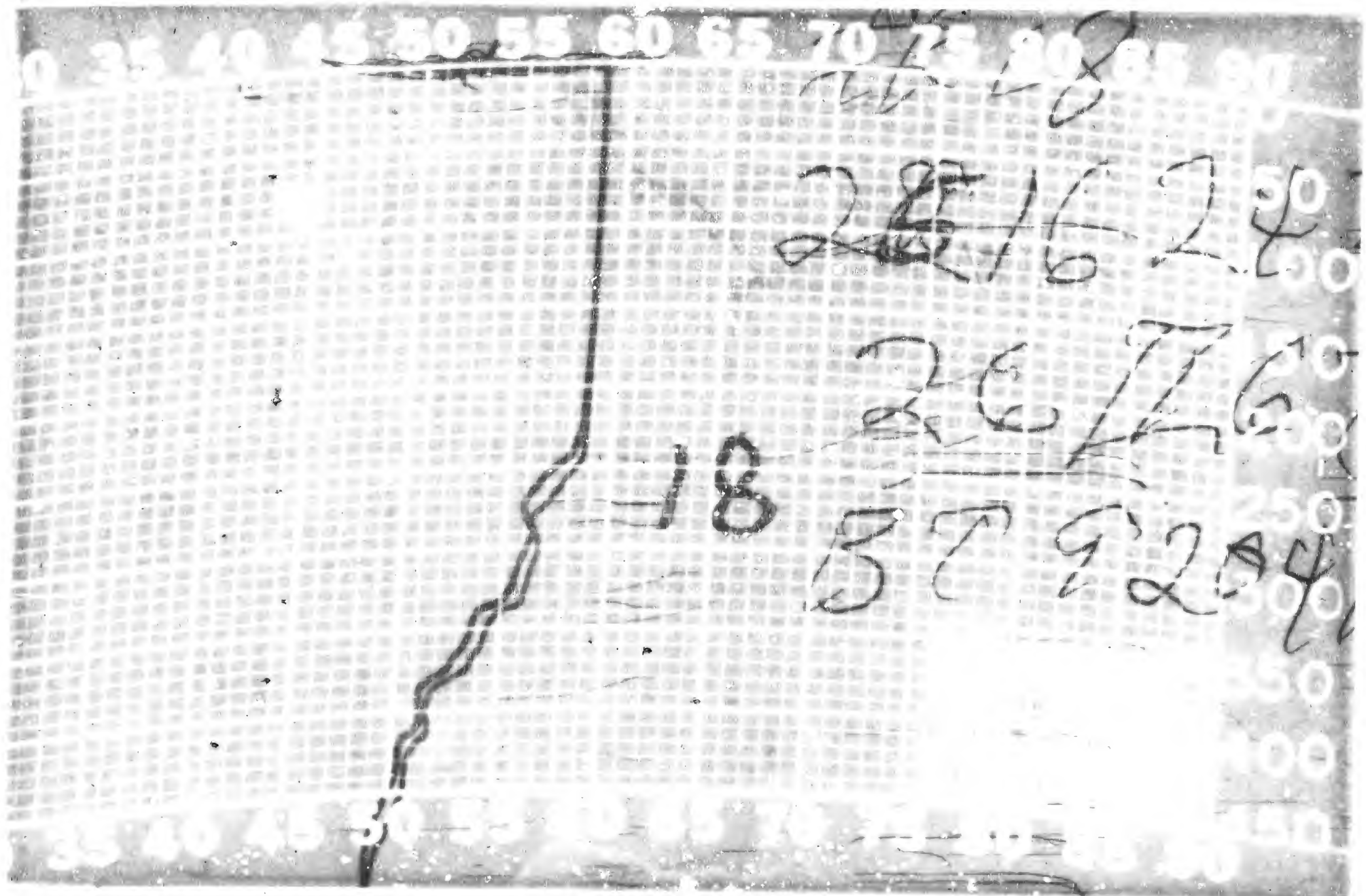
TCS -0.23 DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 877

19

KEY

32125

NODC NO 14890

CARD  
NO

19

OCT-2051

DATE

II-26-67

VESSEL SHEARWATER

LAT 32°29'N LONG 125°02'W DEPTH 2240 SPD

SURF T 58.0 B WIND D 03 F 07 DRY T 58.0 WET T 49.0

BAR 28 WEA 1 CL T 6 C 7 VIS SEA 04'

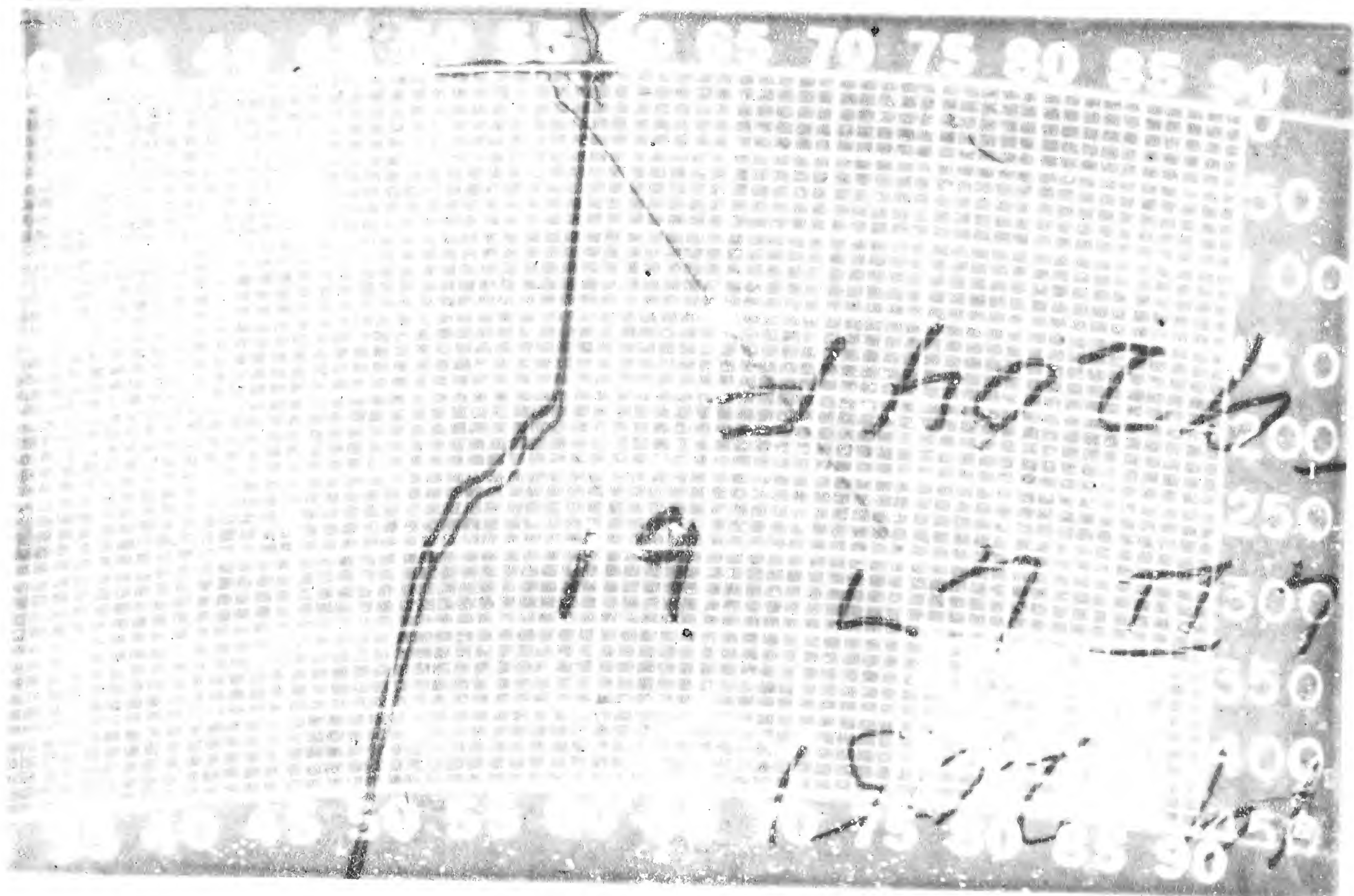
SWELL DIR HT PER

TCS -0.28 DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIC NO 877 20 KEY 32124  
NODC NO 14890 CARD NO 20 GCT 0005 DATE II-27-67  
VESSEL SHEARWATER  
LAT 32° 39' N LONG 124° 14' W DEPTH 2570 SPD  
SURF T 57.0 B WIND D 35 F 10 DRY T 71.0 WET T 64.0  
BAR 27 WEA 1 CL T 0 C 2 VIS SEA 08'  
SWELL DIR HT PER  
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

20

#20 - 0.50

2.7 1.1 1.50

1.5 - 9.20 3.00

1.5 1.5 3.50

1.5 4.00





SIO NO 877 21 KEY 32123  
NODC NO 14890 CARD NO 21 GUT 0422 DATE II-27-67

VESSEL SHEARWATER

LAT 32°28'N LONG 123°26'W DEPTH 1980 SPD

SURF T WIND D 35 F 13 DRY T 55.0 WET T 50.0

BAR 27 WEA 1 CL T 6 C 6 VIS SEA 04'

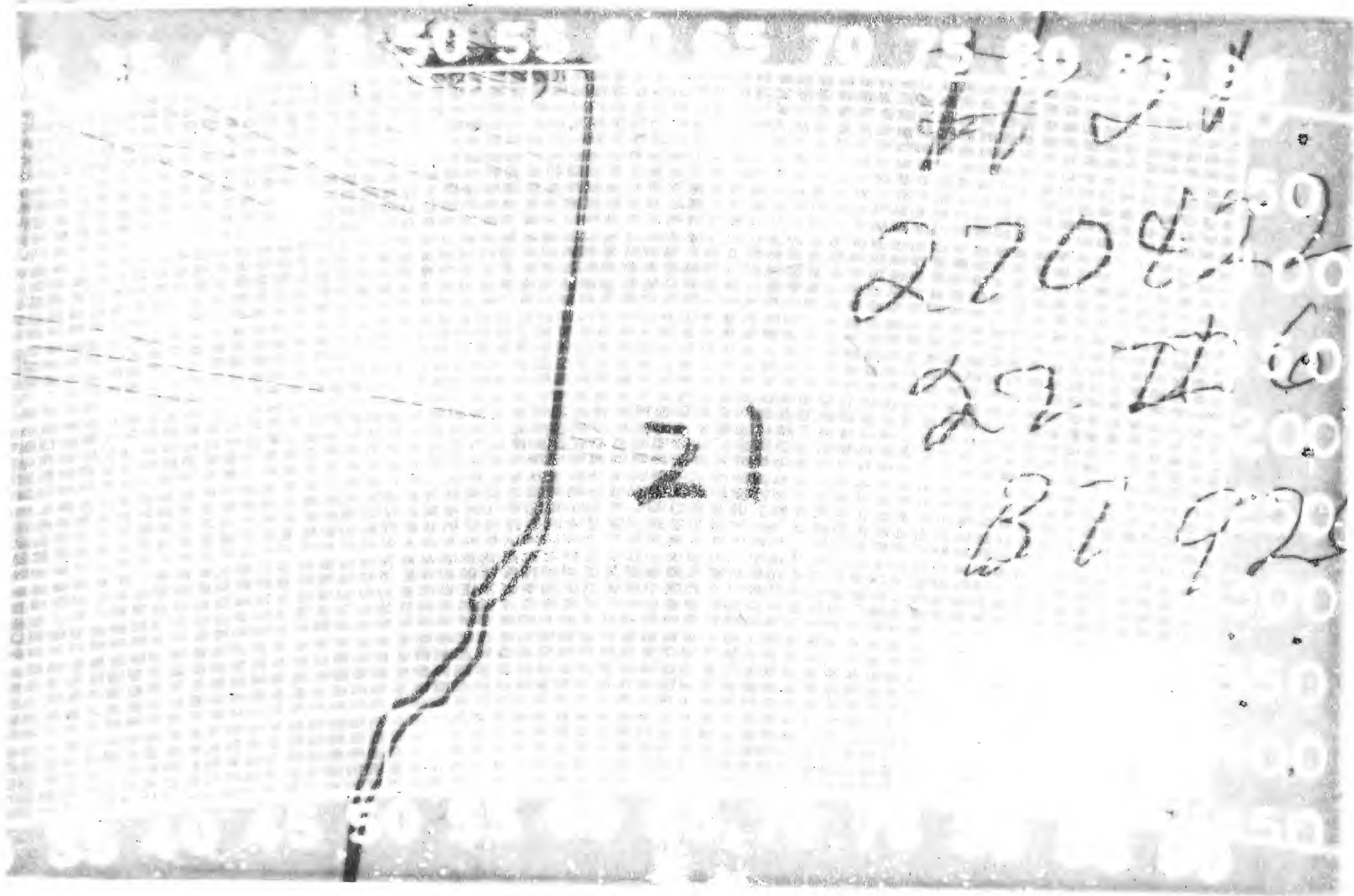
SWELL DIR HT PER

TCS -0.2B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 506c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 22 KEY 32122  
NODC NO 14890 CARD NO 22 OCT 0822 DATE II-27-67

VESSEL SHEARWATER

LAT 32° 29' N LONG 122° 34' W DEPTH 2053 SPD

SURF T 56.0 B WIND D 35 F 13 DRY T 56.0 WET T 51.0

BAR 27 WEA 1 CL T 6 C 6 VIS SEA 04'

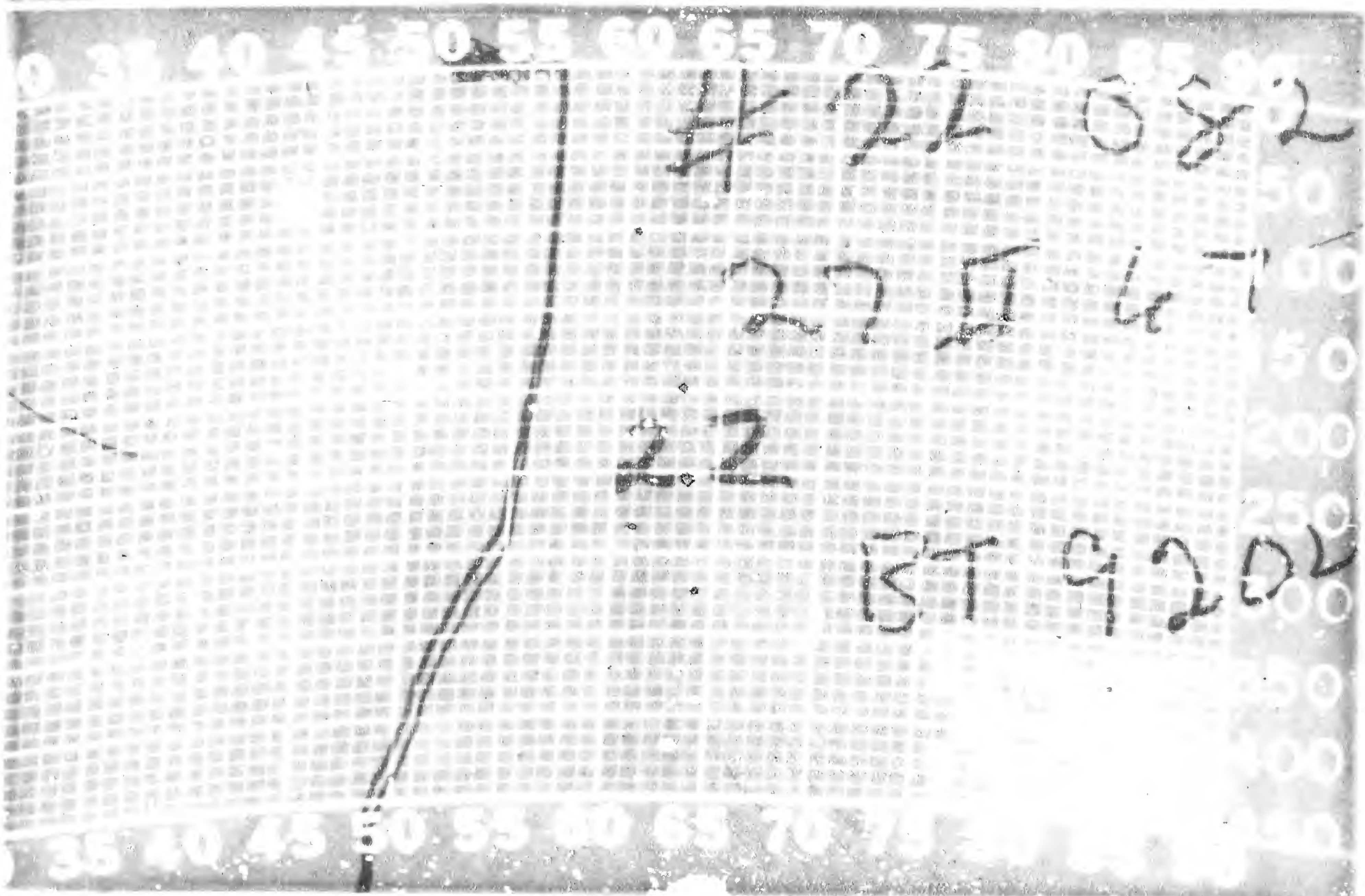
SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877

23

KEY

32121

NODC NO 14890

CARD  
NO

23

GCT 1205

DATE II-27-67

VESSEL SHEARWATER

LAT 32°28' N LONG 121°46' W

DEPTH 2240 SPD

SURF T 56.0 B WIND D 34 F 13 DRY T 58.0 WET T 56.0

BAR 25 WEA 1 CL T 8 . C 4 VIS SEA 04'

SWELL DIR

HT

PER

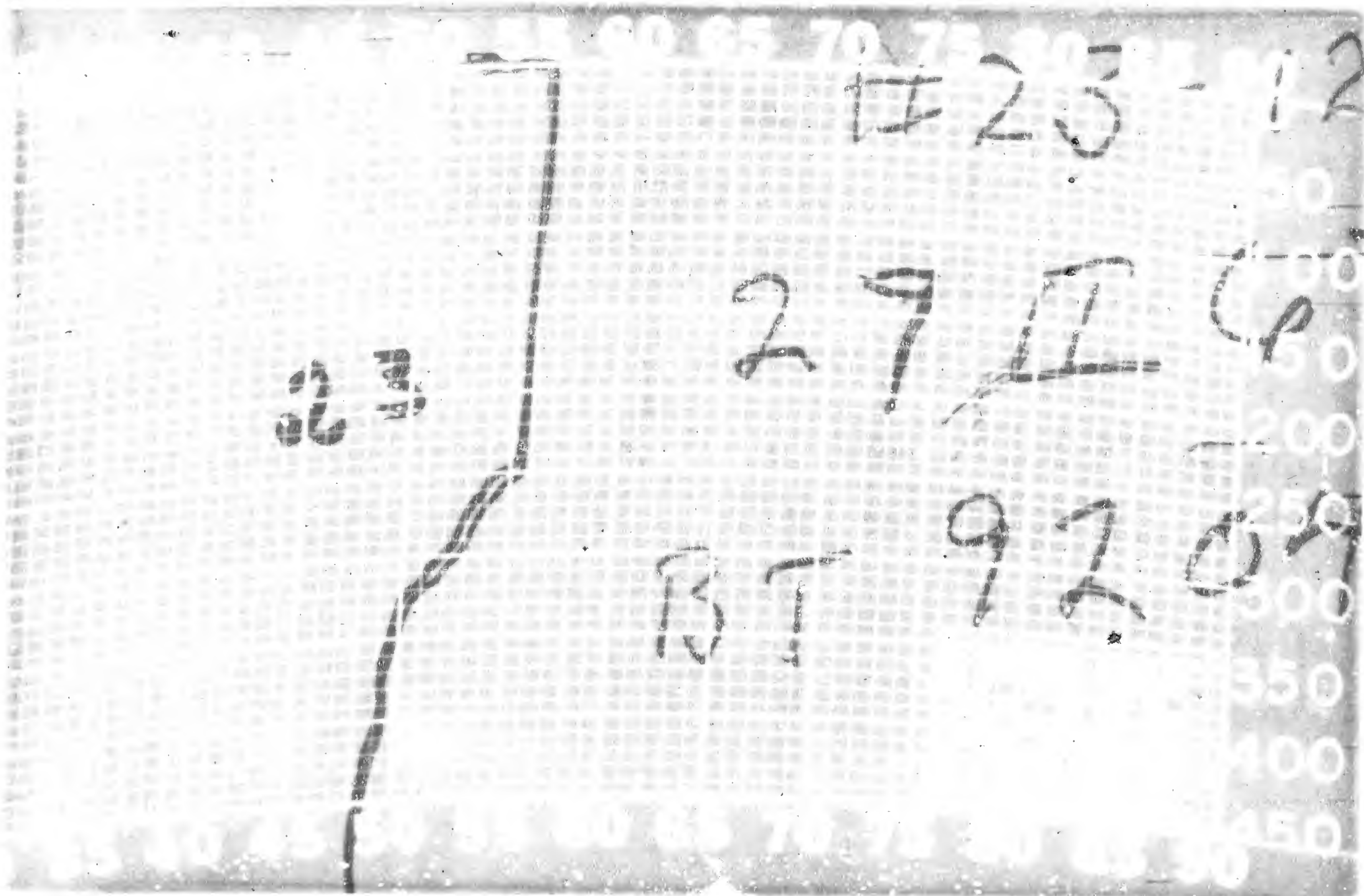
TCS -0.2 B

DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877

24

KEY

32121

NODC NO 14890

CARD NO

24

GCT

1648

DATE

II-27-67

VESSEL SHEARWATER

LAT 32° 23' N LONG 121° 10' W

DEPTH

2100

SPD

SURF T 55.0 B WIND D 34 F 05 DRY T 57.0

WET T

54.0

BAR 27

WEA

1

CL T

8

C

3

VIS

SEA

03'

SWELL DIR

HT

PER

TCS

-0.2 B

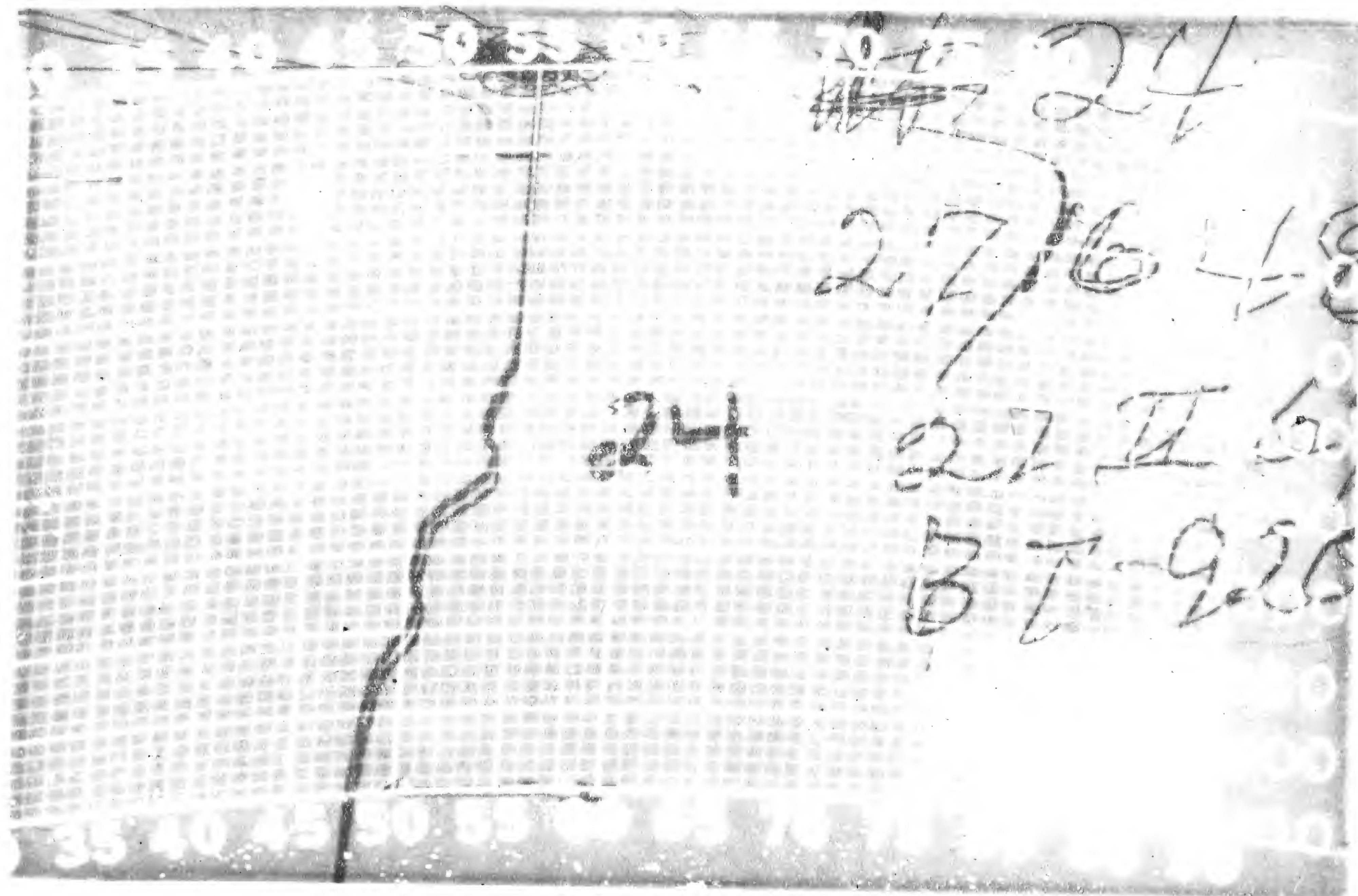
DCS

0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 25 KEY 31121  
NODC NO 14890 CARD NO 25 GCT 2024 DATE II-27-67  
VESSEL SHEARWATER  
LAT 31°46' N LONG 121°02' W DEPTH 1930 SPD  
SURF T WIND D 34 F 06 DRY T 58.0 WET T 56.0  
BAR 26 WEA 1 CL T 8 C 3 VIS SEA 0.3'  
SWELL DIR HT PER  
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HQ PUBL 606c (REV 1956) Scripps Institution of Oceanography

#25 202

27 IV 100

25 151 9 204





SIO NO 877 26 KEY 31121  
NODC NO 14890 CARD NO 26 GCT 0003 DATE II-28-67

VESSEL SHEARWATER

LAT 31°40' N LONG 121°39' W DEPTH 2150 SPD

SURF T WIND D 02 F 10 DRY T 58.0 WET T 57.0

BAR 25 WEA 1 CL T 8 C 2 VIS SEA 0.5'

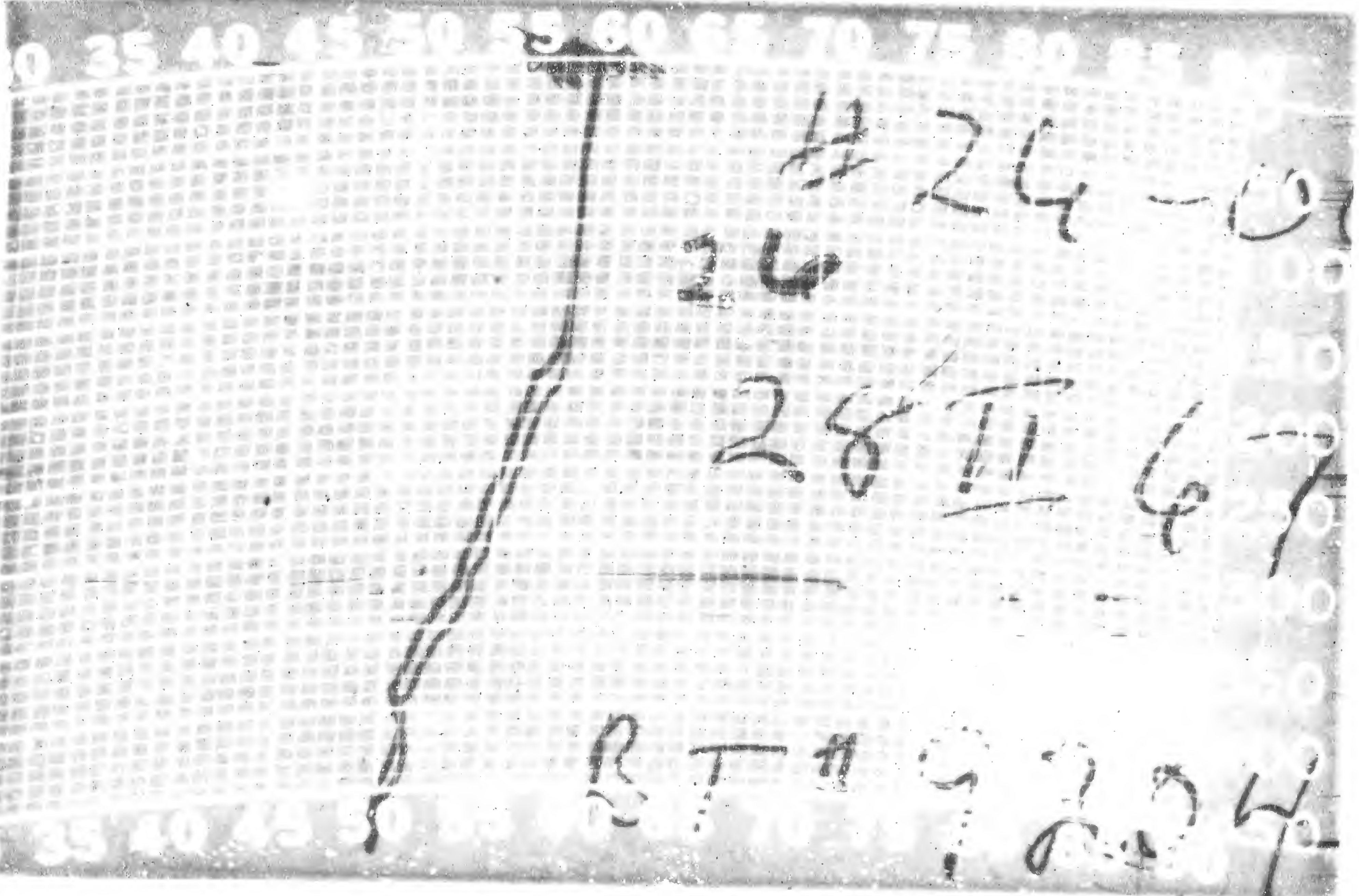
SWELL DIR HT PER

TCS -0.2B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NC 877

27

KEY

31122

NODC NO 14890

CARD  
NO

27

GCT

0428

DATE

II-28-67

VESSEL SHEARWATER

LAT 31041' N LONG 122036' W

DEPTH

2100

SPD

SURF T 56.0 B WIND D 03 F 12

DRY T

58.0

WET T

56.0

BAR 26

WEA

1

CL T

8

C

2

VIS

SEA

05'

SWELL DIR

HT

PER

TCS

-0.2 B

DCS

0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

40

45

50

55

60

65

70

75

80

85

90

95

100

2704 2800

27 II 2000

BT 9250

300

350

400

450

27



SIO NO 877 28 KEY 31123

NODC NO 14890 CARD NO 28 GCT 0825 DATE II-28-67

VESSEL SHEARWATER

LAT 31°40' N LONG 123°26' W DEPTH 2320 SPD

SURF T 58.0 B WIND D 02 F 12 DRY T 58.0 WET T 56.0

BAR 26 WEA 1 CL T 7 C 3 VIS SEA 05'

SWELL DIR HT PER

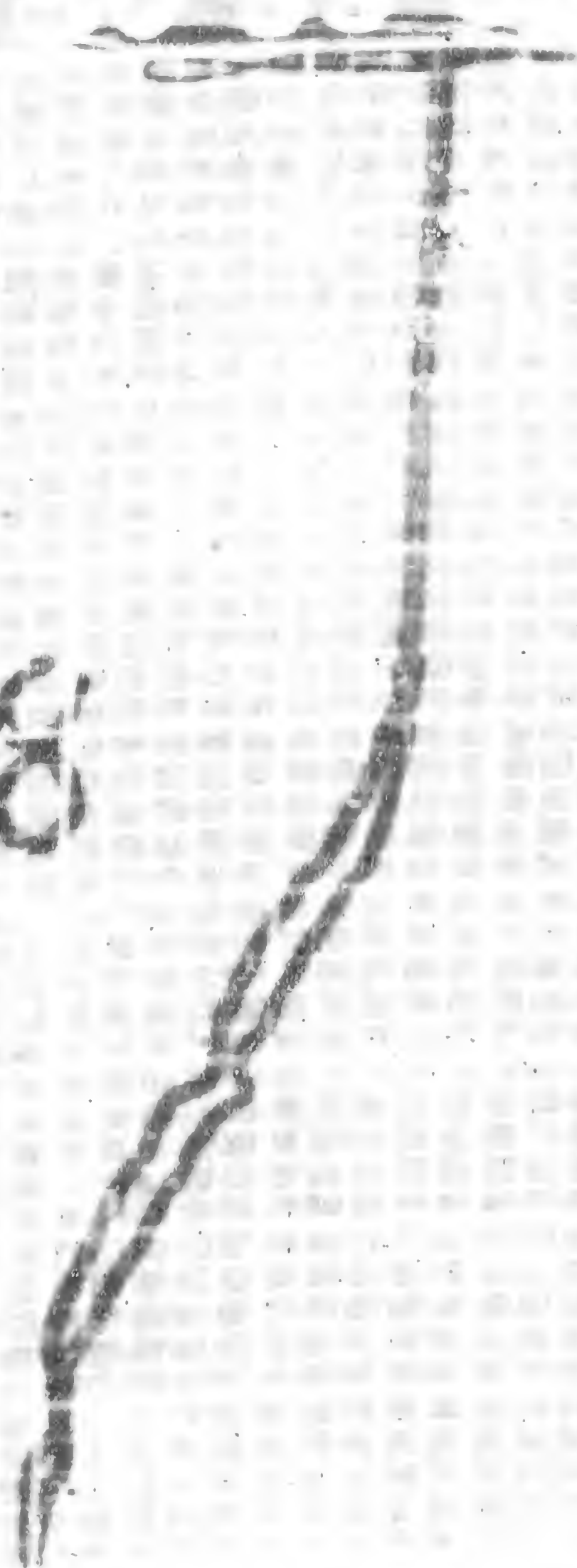
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

28



# 28 052

28 II 670

BT 9204

250

300

350

400

450



SIO NO 877 29 KEY 31124  
NODC NO 14890 CARD NO 29 GUT 1204 DATE II-28-67

VESSEL SHEARWATER

LAT 31°40' N LONG 124°08' W DEPTH 2280 SPD

SURF T 57.5 B WIND D 36 F 10 DRY T 56.0 WET T 54.0

BAR 25 WEA 1 CL T 8 C 2 VIS SEA 04'

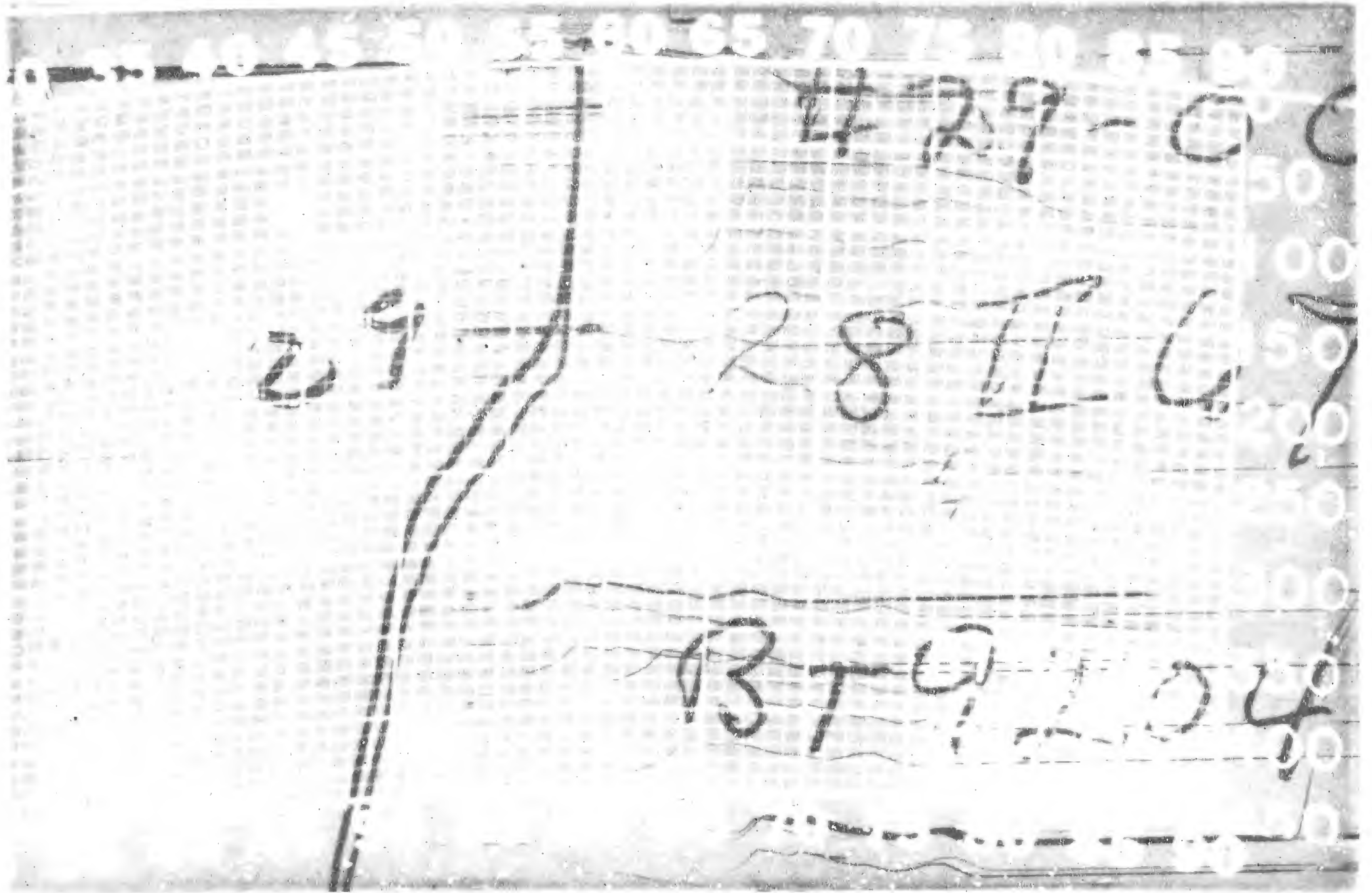
SWELL DIR HT PER

TCS -0.2' B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 30 KEY 31124

NODC NO 14890 CARD NO 30 GCT 1620 DATE II-28-67

VESSEL SHEARWATER

LAT 31°45' N LONG 124°45' W DEPTH 2320 SPD

SURF T WIND D 00 F 00 DRY T 56.0 WET T 53.0

BAR 26 WEA 0 CL T — C 0 VIS SEA 00'

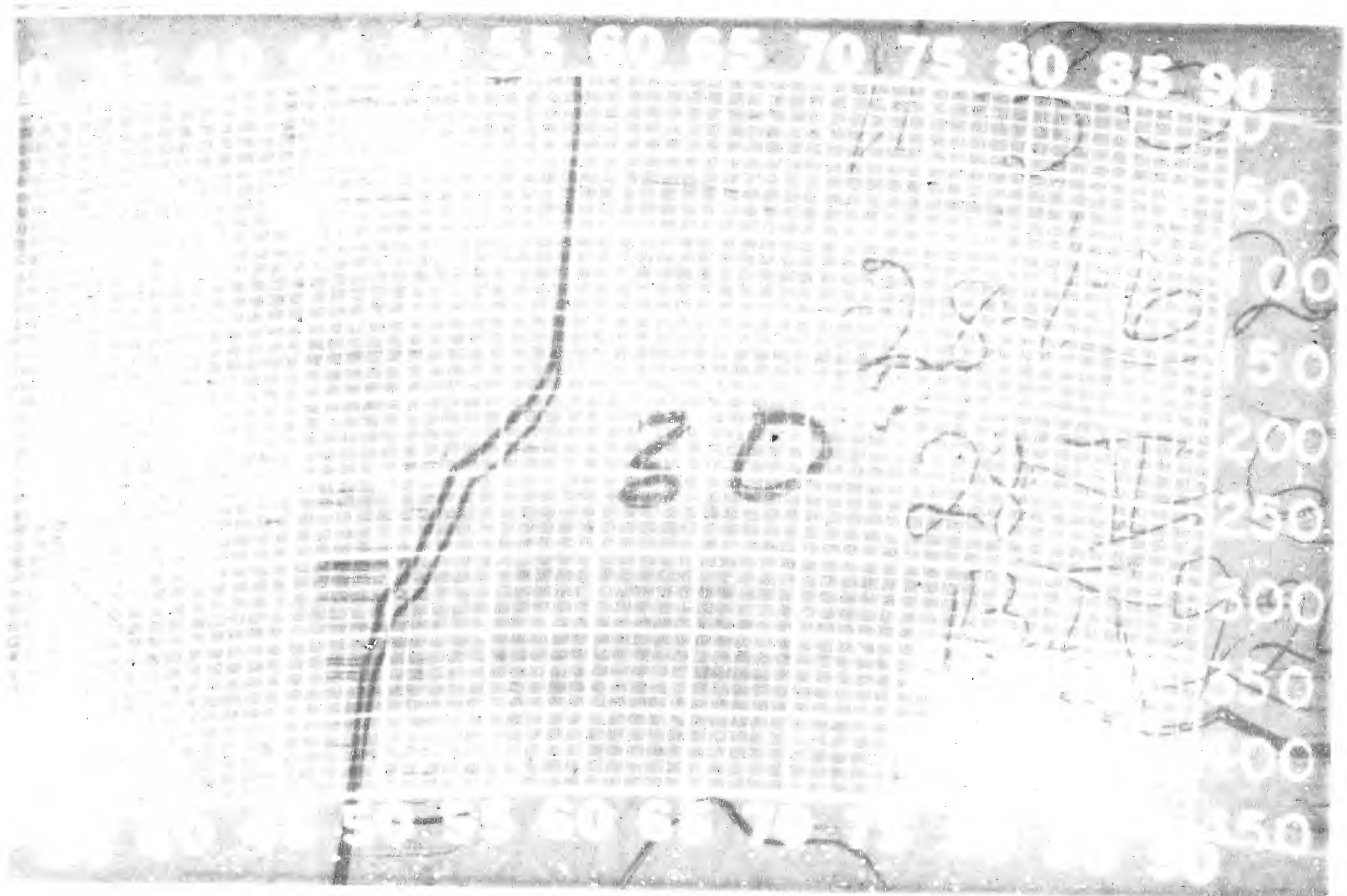
SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 31 KEY 31125

NODC NO 14890 CARD NO 31 OCT 2023 DATE II-28-67

VESSEL SHEARWATER

LAT 31°39' N LONG 125°27' W DEPTH 2400 SPD

SURF T WIND D 00 F 00 DRY T 58.0 WET T 53.0

BAR 26 WEA - CL T 3 C 5 VIS SEA 00'

SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

0 35 40 45 50 55 60 65 70 75 80 85 90 95

#31 2.02

31

2.8 TL 6.5

BT 9.2.04

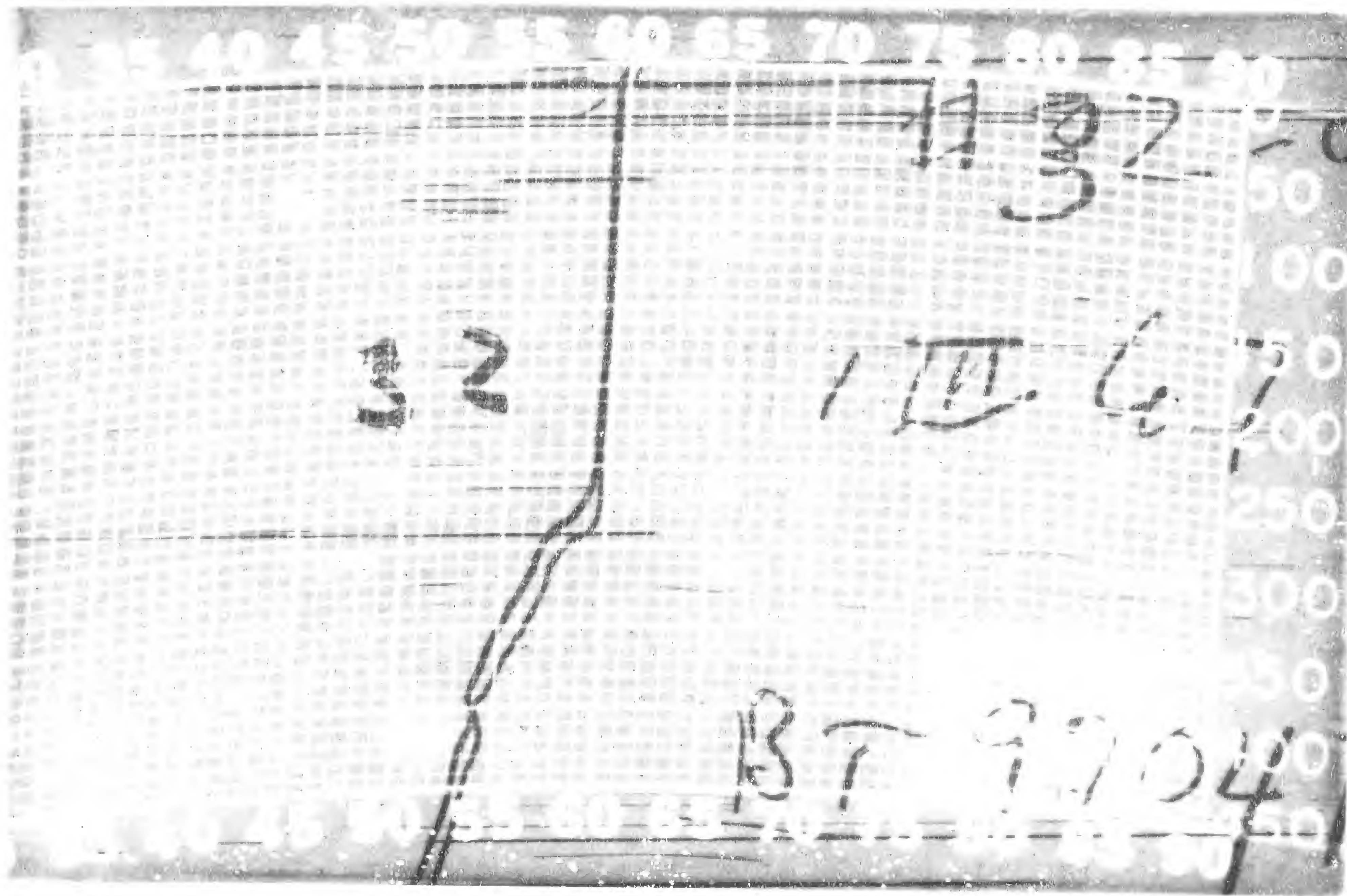


SIC NO 877 32 KEY 31125  
NODC NO 14890 CARD NO 32 OCT 0003 DATE III-1-67  
VESSEL SHEARWATER  
LAT 31° 38' N LONG 125° 58' W DEPTH 2480 SPD  
SURF T 60.0 B WIND D 02 F 05 DRY T 56.0 WET T 52.0  
BAR 24 WEA 1 CL T 8 C 3 VIS SEA 04'  
SWELL DIR HT PER  
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877

33

KEY

31126

NODC NO 14890 CARD NO 33

GCT 0428

DATE III-1-67

VESSEL SHEARWATER

LAT 31° 10' N LONG 126° 26' W DEPTH 2440 SPD

SURF T 58.5 B WIND D 00 F 00 DRY T 56.0 WET T 52.0

BAR 25 WEA 1 CL T 3 C 3 VIS SEA 00'

SWELL DIR HT PER

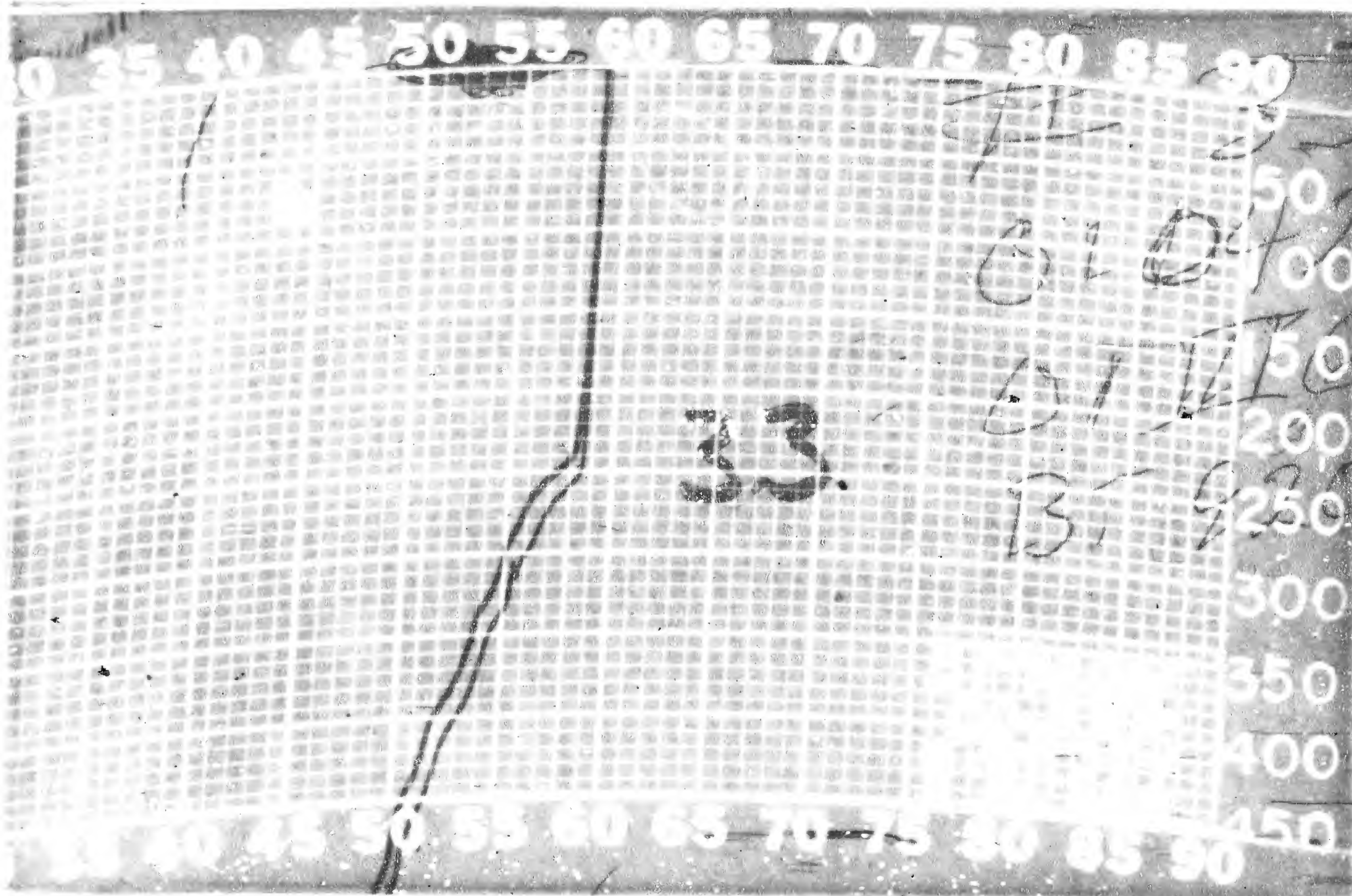
TCS -0.2 B DCS 0

MAY 22 1967

VMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIC NO 877 34 KEY 30125  
NODC NO 14890 CARD NO 34 GCT 0817 DATE III-1-67

VESSEL SHEARWATER

LAT 30°50' N LONG 125°53' W DEPTH 2400 SPD

SURF T 59.0 B WIND D 00 F 00 DRY T 56.0 WET T 52.0

BAR 2.4 WEA 1 CL T 6 C 3 VIS SEA 00'

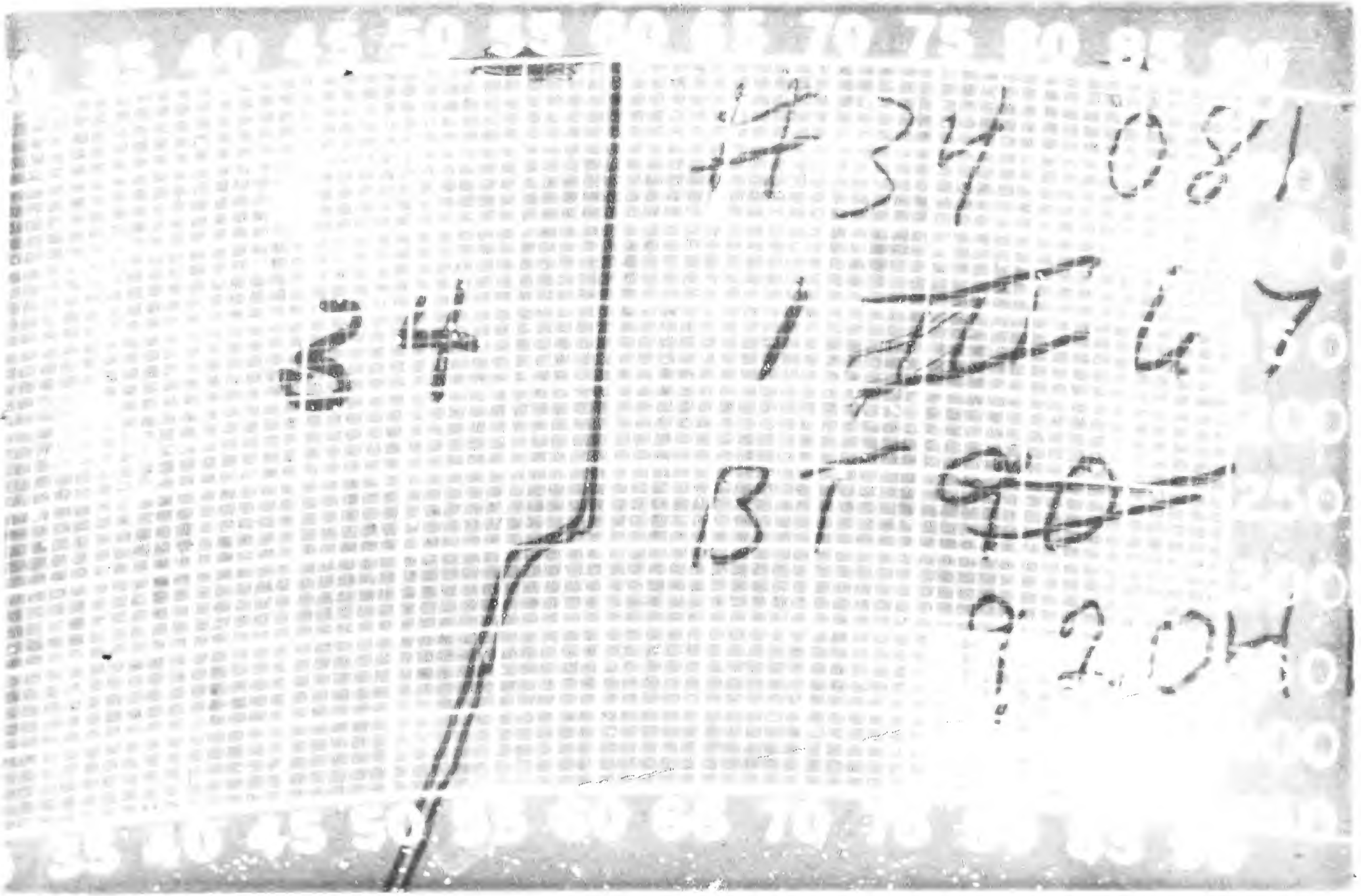
SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 877 35 KEY 30125  
NODC NO 14890 CARD NO 35 GCT 1205 DATE III-1-67  
VESSEL SHEARWATER  
LAT 30°50' N LONG 125°12' W DEPTH 2090 SPD  
SURF T 59.0 B WIND D 36 F 10 DRY T 57.0 WET T 55.0  
BAR 23 WEA 1 CL T 8 C 4 VIS SEA 02'  
SWELL DIR HT PER  
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography

0 10 20 30 40 50 55 60 65 70 75 80 85 90

35

# 35 - 1200

1 11 6 200

BT 9204



SIO NO 877

36

KEY

30124

NODC NO 14890 CARD NO

36

GCT 1620

DATE III-1-67

VESSEL SHEARWATER

LAT 30° 55' N LONG 124° 18' W DEPTH 2090 SPD

SURF T WIND D 35 F 12 DRY T 56.0 WET T 52.0

BAR 23 WEA 1 CL T 8 C 2 VIS SEA 05'

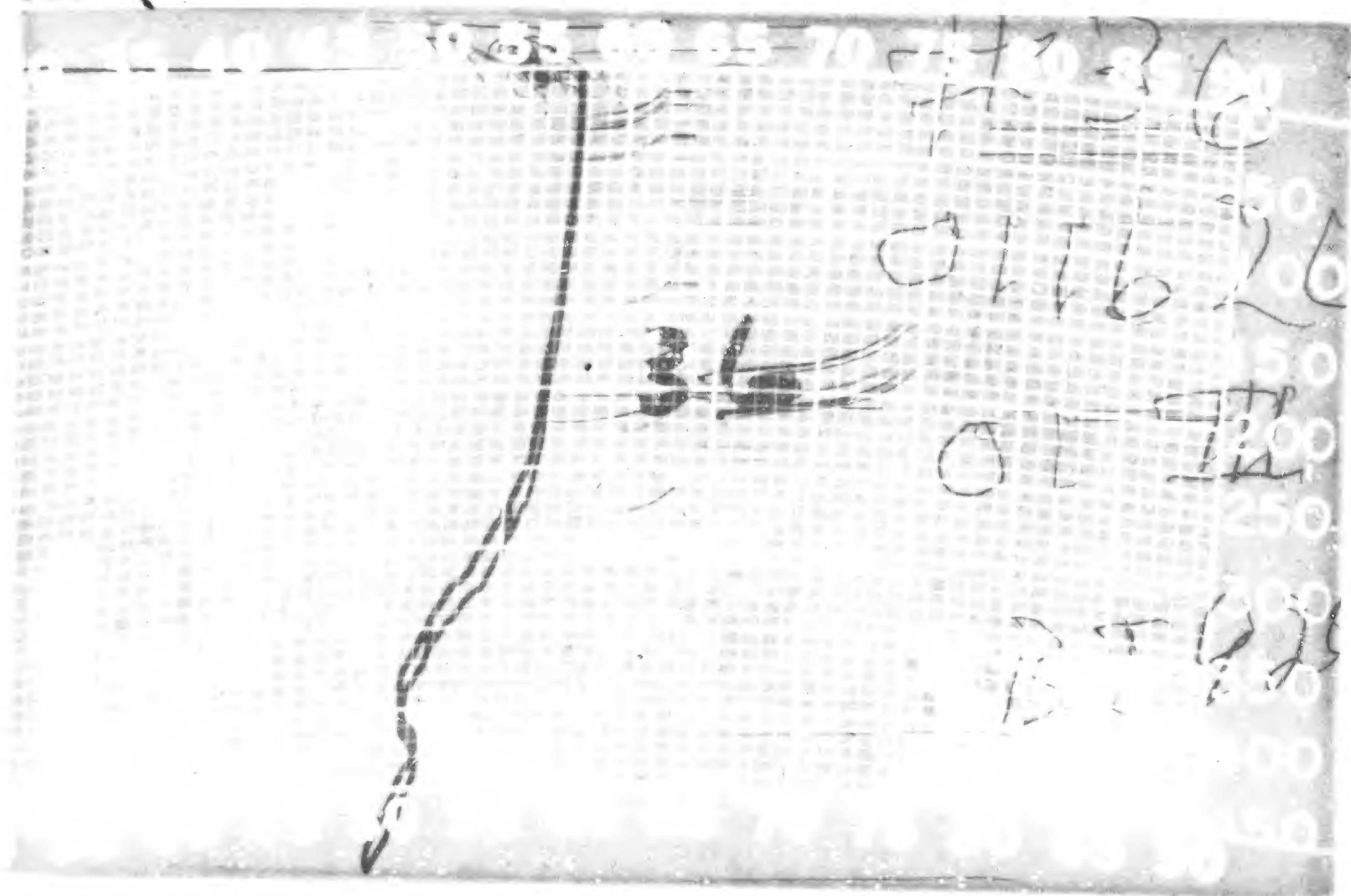
SWELL DIR HT PER

TCS -0.28 DCS 0

MAY 22 1967

VMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV. 1956) Scripps Institution of Oceanography





SIO NO 877 37 KEY 30123  
NODC NO 14890 CARD NO 37 GUT 2050 DATE III-1-67

VESSEL SHEAR WATER

LAT 30°55' N LONG 123°35' W DEPTH 2320 SPD

SURF T 61.0 B WIND D 01 F 10 DRY T 57.0 WET T 53.0

BAR 23 WEA 1 CL T 8 C 2 VIS SEA 05'

SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIC NO 877

38

KEY

30122

NODC NO 14890

CARD  
NO

38

GCT

0006

DATE

III-2-67

VESSEL SHEARWATER

LAT 30°56' N LONG 122°59' W DEPTH 2342 SPD

SURF T WIND D 33 F 10 DRY T 59.0 WET T 57.0

BAR 21 WEA 1 CL T 8 C 5 VIS SEA 06'

SWELL DIR HT PER

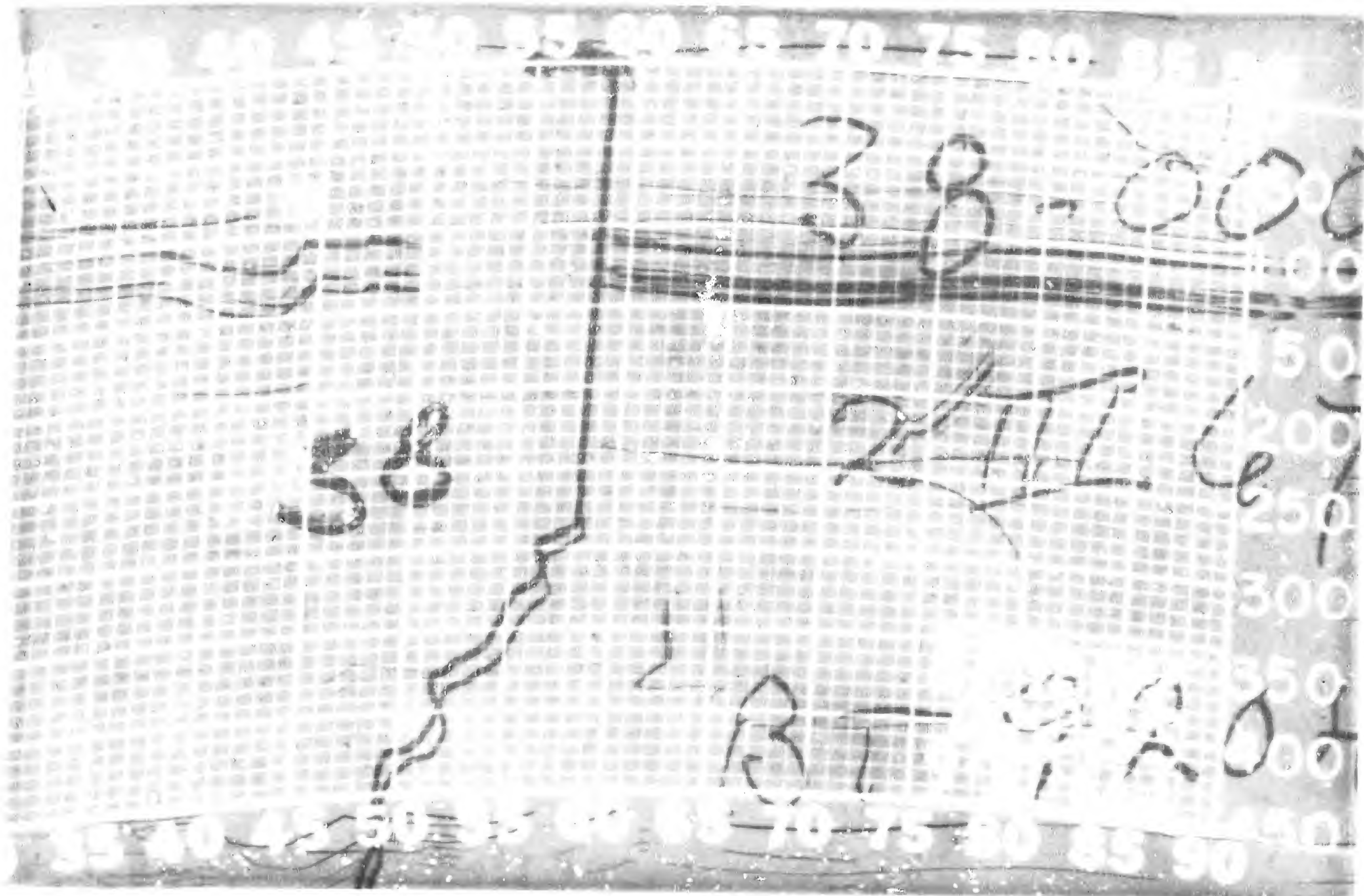
TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography







SIO NO 877 39 KEY 30122

NODC N 14890 CARD NO 39 GCT 0428 DATE III-2-67

VESSEL SHEARWATER

LAT 30°58' N LONG 122°00' W DEPTH 2342 SPD

SURF T WIND D 34 F 14 DRY T 56.0 WET T 52.0

BAR 19 WEA 1 CL T 6 C 3 VIS SEA 05'

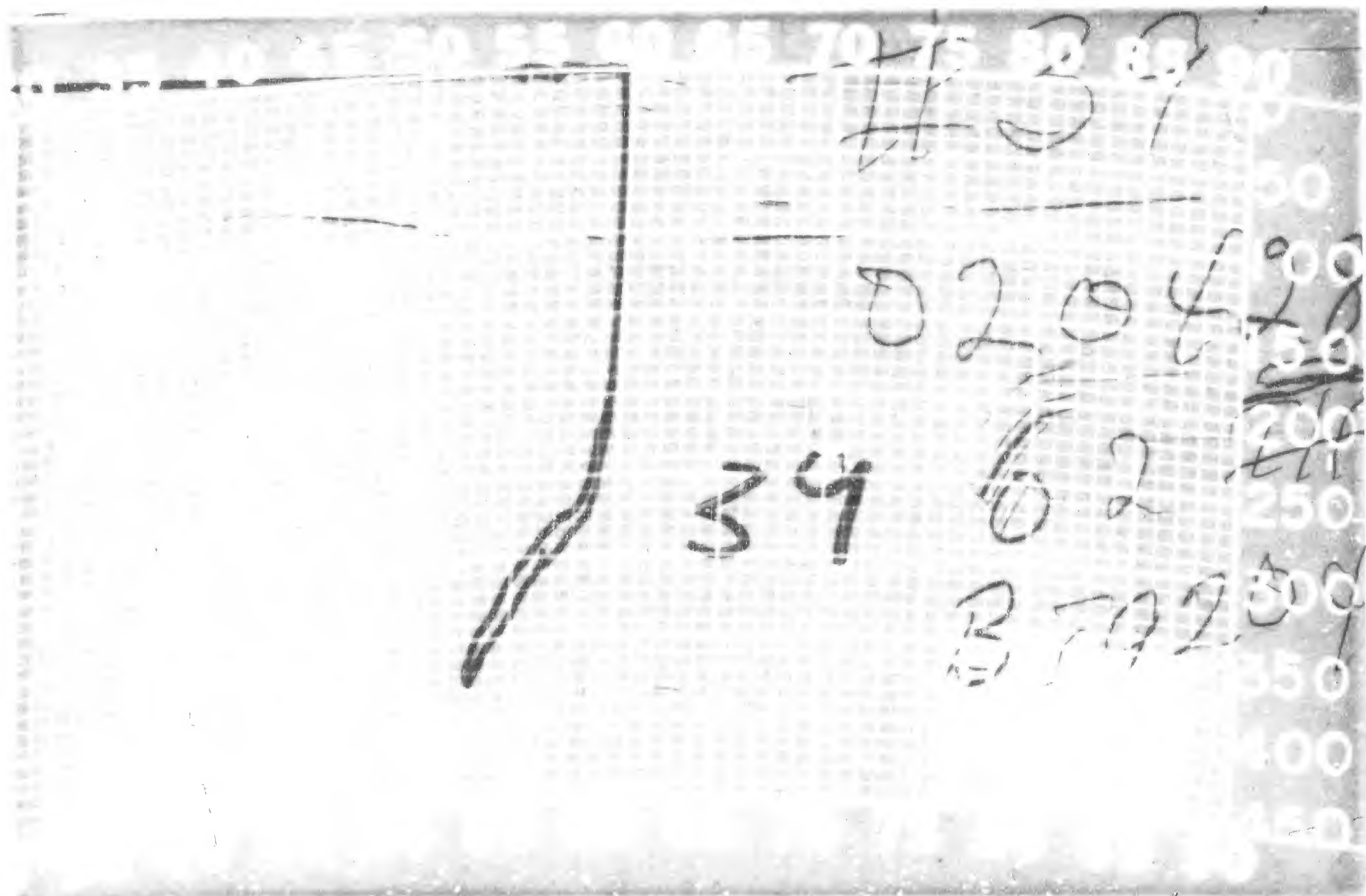
SWELL DIR HT PER

TCS -0.2 B DCS 0

MAY 22 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879 2 KEY 34123  
NODC NO 14892 CARD NO 2 GCT 0602 DATE IV - 3 - 67  
VESSEL SHEARWATER  
LAT 34° 56' N LONG 123° 50' W DEPTH 2100 SPD  
SURF T 55.0 B WIND D 01 F 10 DRY T 52.0 WET T 50.0  
BAR 22 WEA 1 CL T 8 C 2 VIS SEA 02'  
SWELL DIR HT PER  
TCS 0'B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



~~1st~~ 2

03 06 07

03 ~~12~~ 67

92 04 ~~12~~

222-67-09



SIO NO 879

1

KEY

35123

NODC NO 14892

CARD  
NO

1

GCT 0225

DATE IV-3-67

VESSEL SHEARWATER

LAT 35°00' N LONG 123°08' W

DEPTH 2200

SPD

SURF T 54.5 B WIND D 00 F 00 DRY T 53.0

WET T 50.0

BAR 21

WEA

1

CL T 8

C

3

VIS

SEA

SWELL DIR

HT

PER

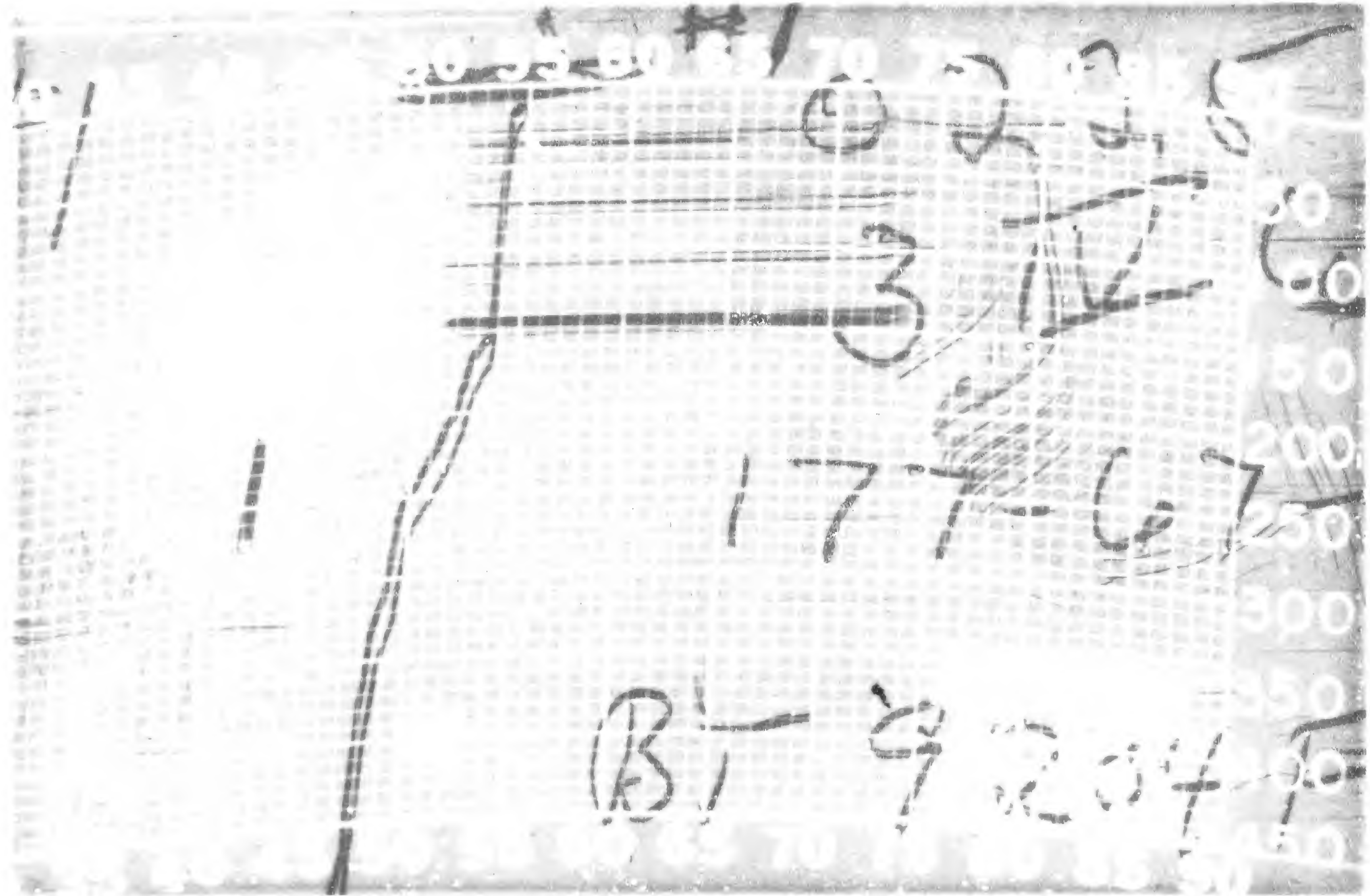
TCS 0'B

DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 879 3 KEY 34124  
NODC NO 14892 CARD NO 3 GCT 0815 DATE IV-3-67

VESSEL SHEARWATER

LAT 34°57' N LONG 124°19' W DEPTH 2260 SPD

SURF T WIND D 01 F 10 DRY T 52.0 WET T 50.0

BAR 22 WEA 8 CL T 5 C 5 VIS SEA 02'

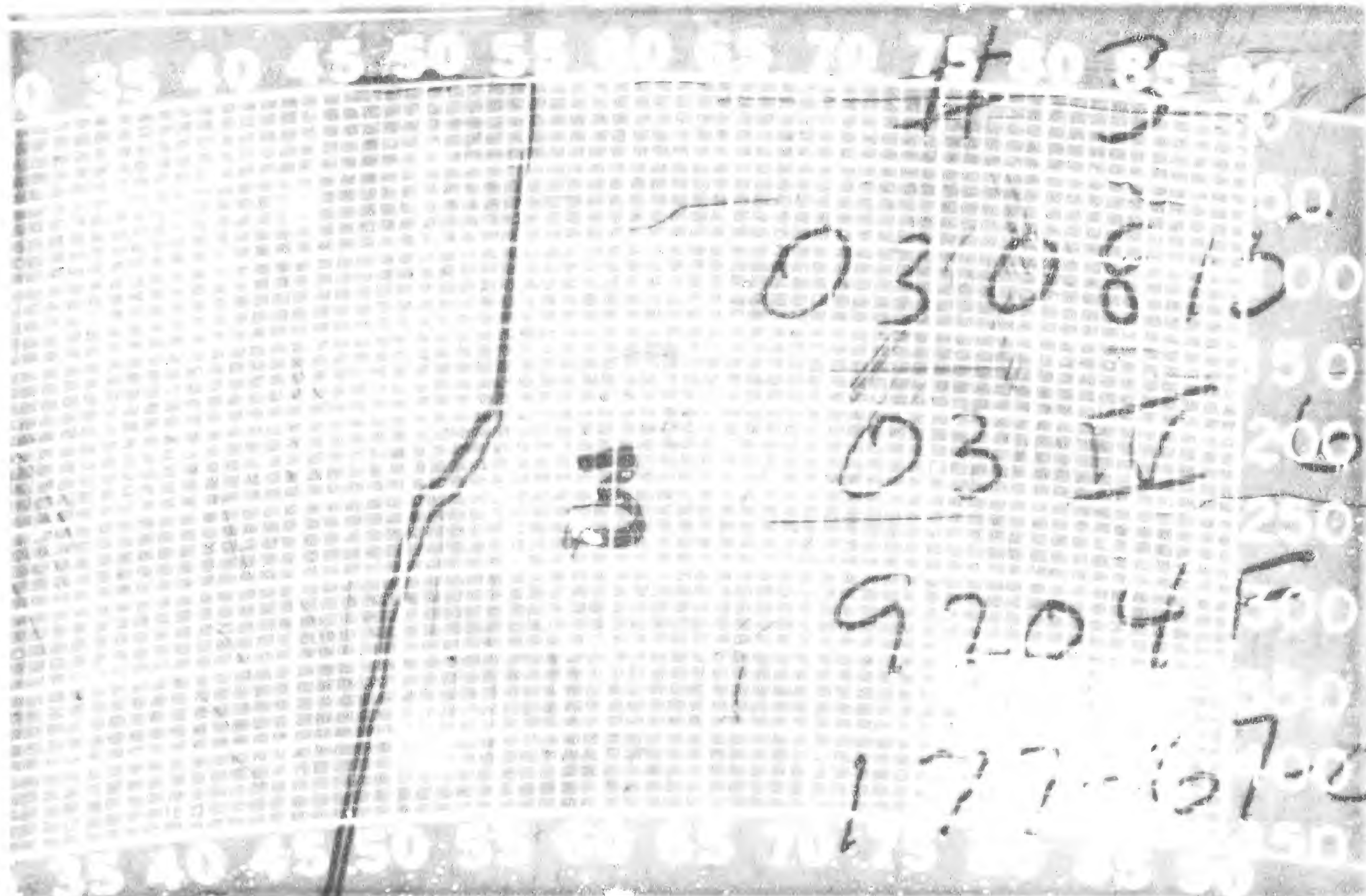
SWELL DIR HT PER

TCS 0°B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 879

4

KEY

34125

NODC NO 14892 CARD NO 4

GCT 1205

DATE IV - 3 - 67

VESSEL SHEARWATER

LAT 34°57'N LONG 125°06'W DEPTH 2480 SPD

SURF T WIND D 01 F 08 DRY T 52.0 WET T 50.0

BAR 21 WEA 1 CL T 5 C 2 VIS SEA 10'

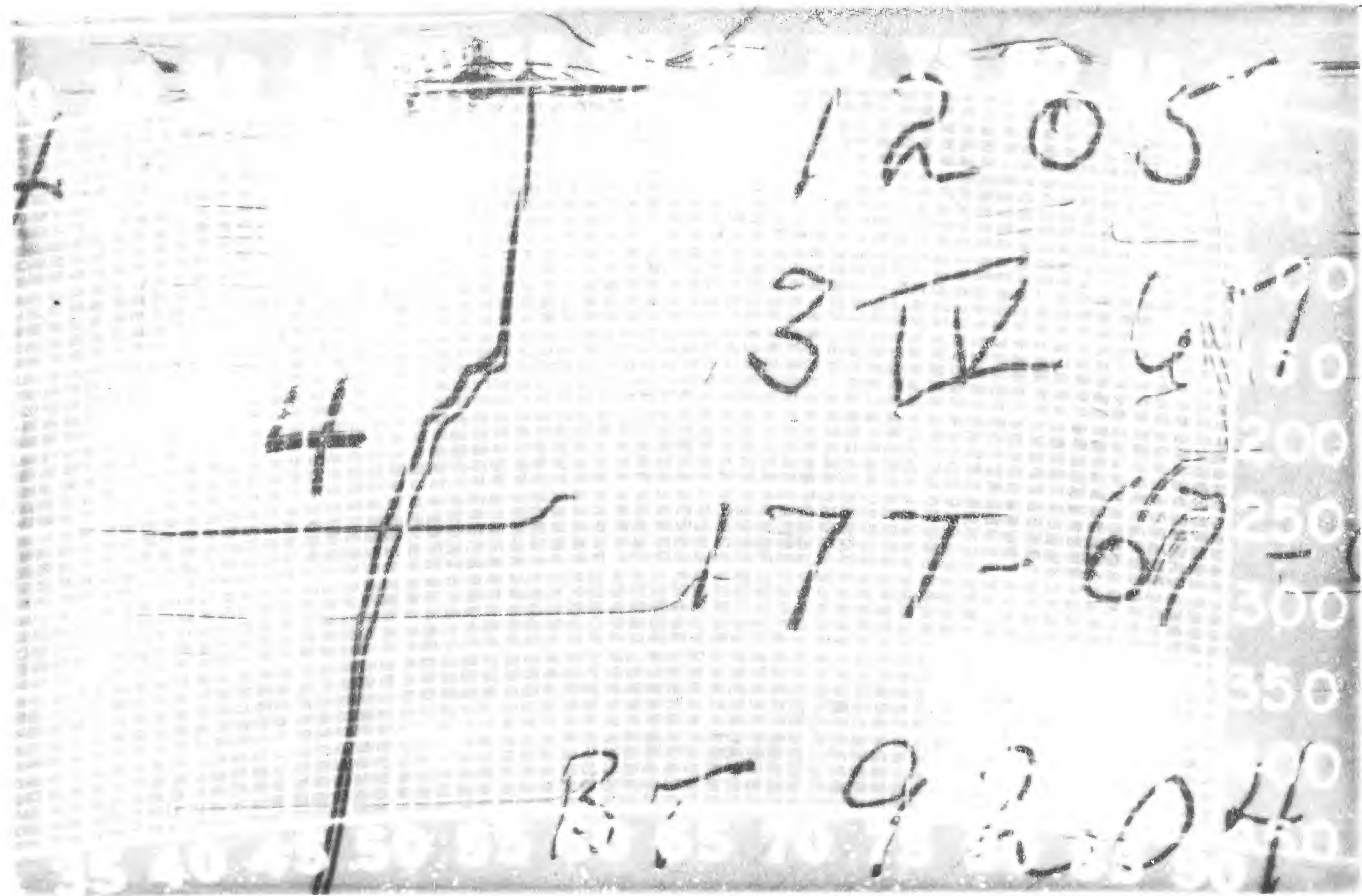
SWELL DIR HT PER

TCS 0°B DCS -10'

MAY 26 1967

## WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 879

5

KEY

34126

NODC NO 14892 CARD NO 5

GCT

2135

DATE

IV-3-67

VESSEL SHEARWATER

LAT 34° 20' N LONG 126° 24' W DEPTH 2575 SPD

SURF T 58.0 B WIND D 32 F 10 DRY T 62.0 WET T 55.0

BAR 19 WEA 2 CL T 6 C 8 VIS SEA 06'

SWELL DIR

HT

PER

TCS

0' B

DCS

-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



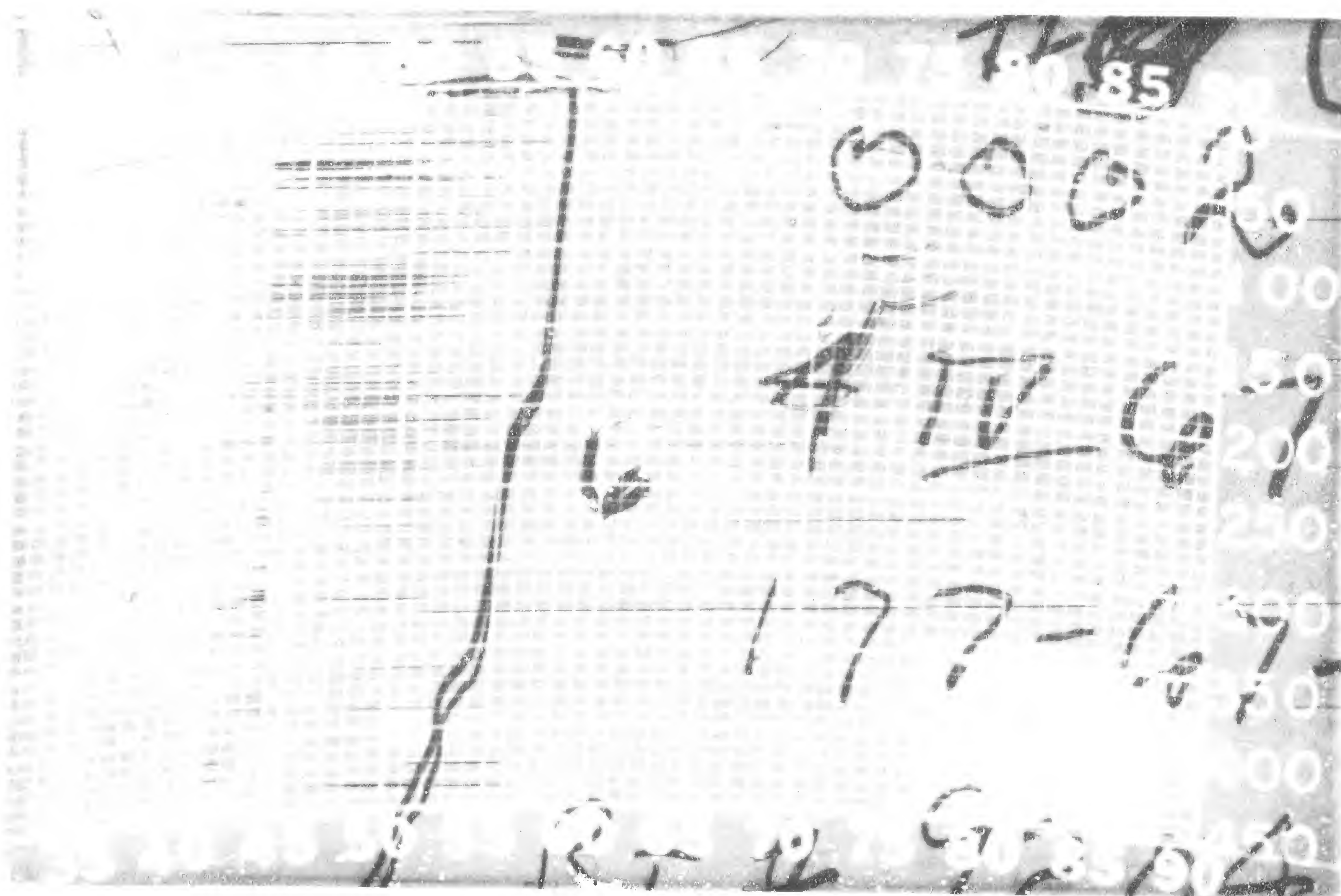


SIO NO 879 6 KEY 34126  
NODC NO 14892 CARD NO 6 GCT 0002 DATE IV-4-67  
VESSEL SHEARWATER  
LAT 34°10' N LONG 126°23' W DEPTH 2440 SPD  
SURF T WIND D 32 F 10 DRY T 61.0 WET T 54.0  
BAR 19 WEA 2 CL T 6 C 8 VIS SEA 06'  
SWELL DIR HT PER  
TCS 0.5 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



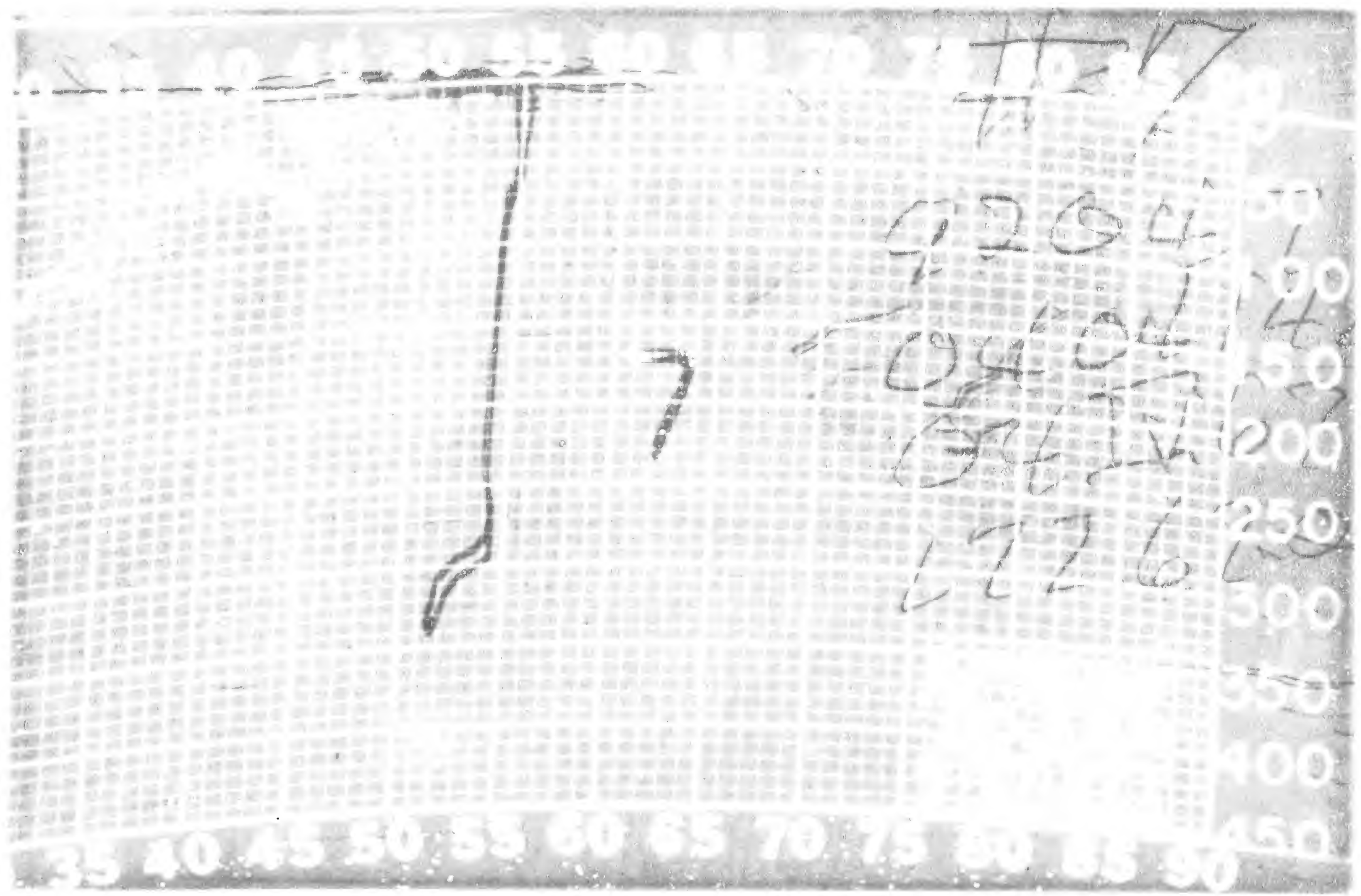


SIO NO 879 7 KEY 34125  
NODC NO 14892 CARD NO 7 GCT 0414 DATE IV-4-67  
VESSEL SHEARWATER  
LAT 34°10' N LONG 125°28' W DEPTH 2471 SPD  
SURF T 55.0 B WIND D 36 F 12 DRY T 57.0 WET T 54.0  
BAR 17 WEA 2 CL T 6 C 8 VIS SEA 02'  
SWELL DIR HT PER  
TCS 0°B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879

8

KEY

34124

NODC NO 14892

CARD  
NO

8

GCT 0839

DATE IV-4-67

VESSEL SHEARWATER

LAT 34°10' N LONG 124°28' W DEPTH 2381 SPD

SURF T 55.0 B WIND D 01 F 10 DRY T 52.0 WET T 49.0

BAR 17 WRA 6 CL T 5 C 8 VIS SEA 02'

SWELL DIR

HT

PER

TCS

0'B

DCS

-10'

MAY 28 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

8

#8

9204

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0411

177-6

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9800  
9900  
10000



SIO NO 879 . 9 KEY 34123

NODC NO 14892 CARD NO 9 GCT 1213 DATE IV-4-67

VESSEL SHEARWATER

LAT 34°10' N LONG 123°42' W DEPTH 2560 SPD

SURF T WIND D 01 F 68 DRY T 55.0 WET T 53.0

BAR 15 WEA 2 CL T 6 C 8 VIS SEA 04'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606a (REV 1956) Scripps Institution of Oceanography

9-1243

4 ~~12~~ - 67

177-67-1

B 70 29-11-4



SIO NO 879 10 KEY 34122

NODC NO 14892 CARD NO 10 GCT 1631 DATE IV-4-67

VESSEL SHEARWATER

LAT 34°04' N LONG 122°43' W DEPTH 2320 SPD

SURF T 56.0 B WIND D 32 F 12 DRY T 54.0 WET T 52.0

BAR 16 WEA 5 CL T 7 C 8 VIS SEA —

SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HC PUBL 6050 (REV 1956) Scripps Institution of Oceanography



BT-9200 50  
BT-9200 100  
BT-9200 150  
BT-9200 200  
BT-9200 250  
BT-9200 300  
BT-9200 350  
BT-9200 400  
BT-9200 450



SIO NO 879 11 KEY 34121

NODC NO 14892 CARD NO // GCT 1830 DATE IV-4-67

VESSEL SHEARWATER

LAT 34° 05' N LONG 121° 055' W DEPTH 2035 SPD

SURF T 57.0 B WIND D 29 F 10 DRY T 58.0 WET T 52.0

BAR 16 WEA 1 CL T 8 C 4 VIS SEA 04'

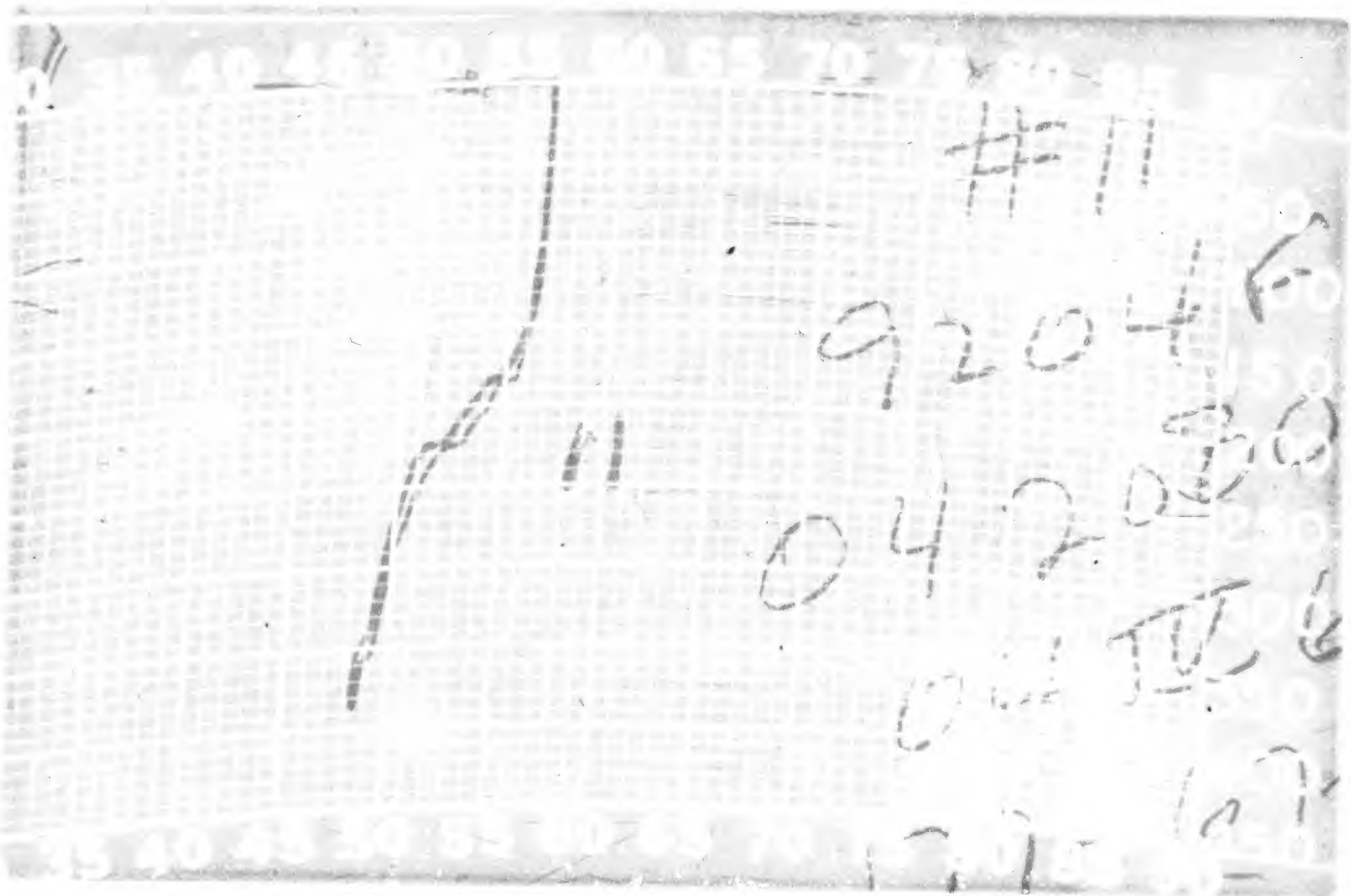
SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879 12 KEY 33121  
NODC NO 14892 CARD NO 12 GCT 0424 DATE IV-5-67  
VESSEL SHEARWATER  
LAT 33°19' N LONG 121°52' W DEPTH 2100 SPD  
SURF T 56.0 B WIND D 32 F 18 DRY T 56.0 WET T 52.0  
BAR 19 WEA 1 CL T 6 C 3 VIS SEA 05'  
SWELL DIR HT PER  
TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



12

12

05012

BS 116

BT 920

17700

100

150



SIO NO 879

13

KEY

33122

NODC NO 14892 CARD NO

13

GCT 0815

DATE IV-5-67

VESSEL SHEARWATER

LAT 33°18' N LONG 122°40' W DEPTH 2480 SPD

SURF T WIND D 32 F 16 DRY T 54.0 WET T 50.0

BAR 21 WEA 1 CL T - C 2 VIS SEA 05'

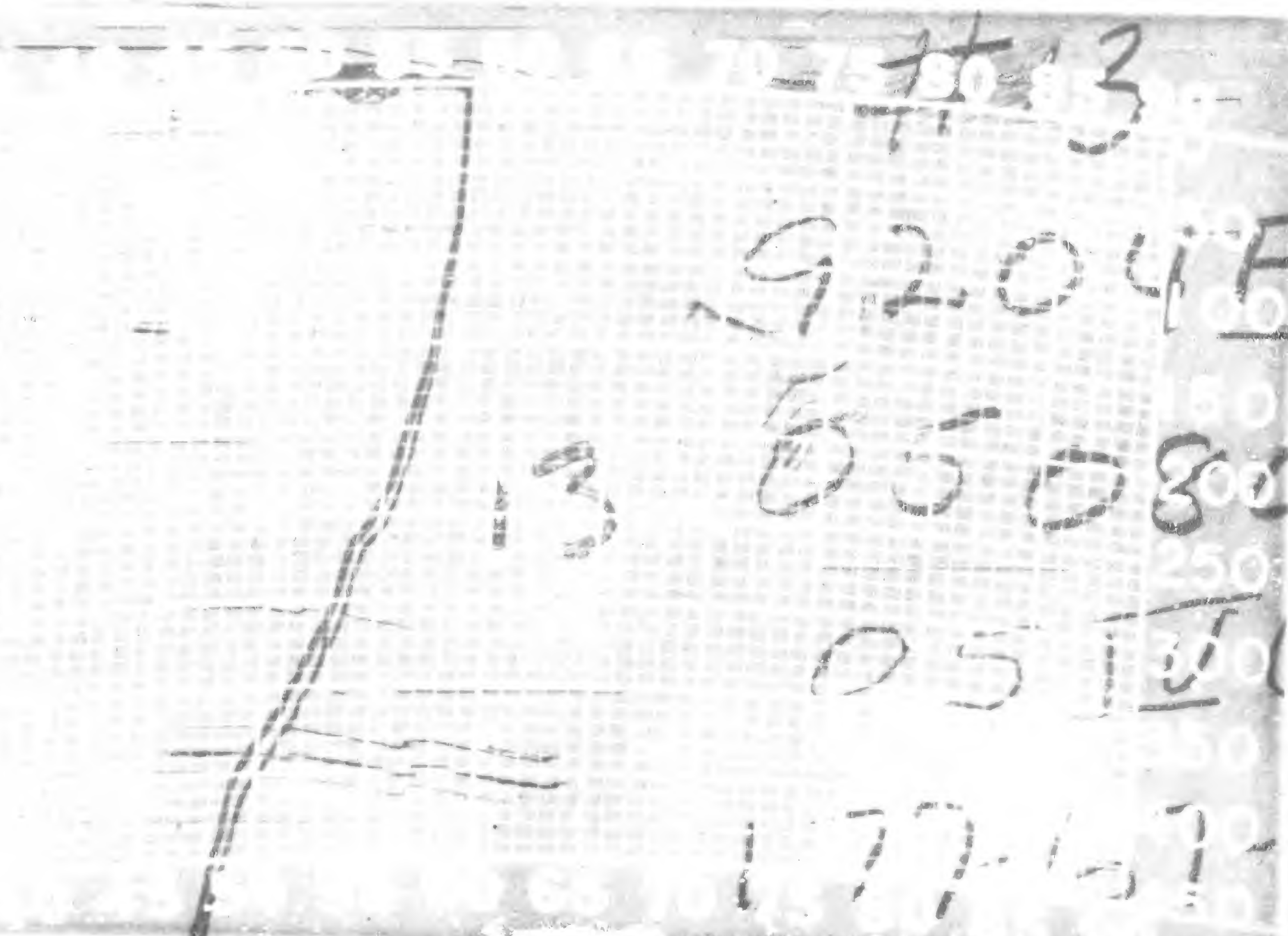
SWELL DIR HT PER

TCS 0°B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 879 14 KEY 33123

NODC NO 14892 CARD NO 14 GCT 1204 DATE IV-5-67

VESSEL SHEARWATER

LAT 33°19' N LONG 123°26' W DEPTH 2315 SPD

SURF T WIND D 23 F 10 DRY T 56.0 WET T 54.0

BAR 21 WEA 1 CL T 6 C 6 VIS SEA 04'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

14-12.00

05-IV 60

07-02.00

14





SIO NO 879 15 KEY 33124

NODC NO 14892 CARD NO 15 GCT 1607 DATE IV-5-67

VESSEL SHEARWATER

LAT 33°17' N LONG 124°10' W DEPTH 2480 SPD

SURF T 58.0 B WIND D 27 F 10 DRY T 58.0 WET T 55.0

BAR 21 WEA 1 CL T 8 C 4 VIS SEA 03'

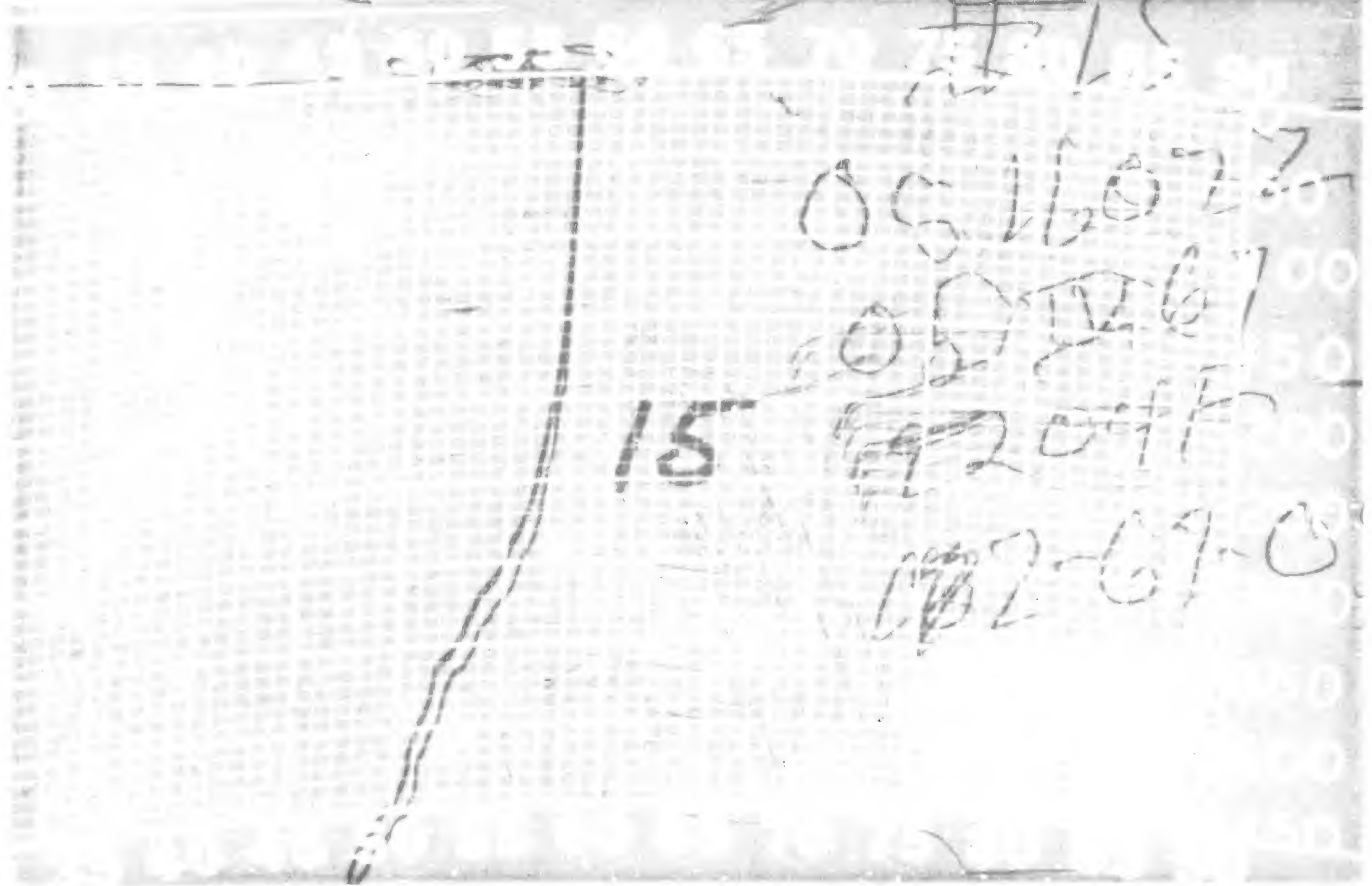
SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879 16 KEY 33125

NODC NO 14892 CARD NO 16 GCT 2035 DATE IV-5-67

VESSEL SHEARWATER

LAT 33°16'N LONG 125°05'W DEPTH 2428 SPD

SURF T 58.0 B WIND D 27 F 12 DRY T 59.0 WET T 55.0

BAR 21 WEA 1 CL T 8 C 5 VIS SEA 04'

SWELL DIR HT PER

TCS 0.8 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



1.5

0.5

0.5

0.5

0.5



SIO NO 879 17 KEY 33125  
NODC NO 14892 CARD NO 17 GCT 0003 DATE IV-6-67  
VESSEL SHEARWATER  
LAT 33°16'N LONG 125°46'W DEPTH 2480 SPD  
SURF T 58.5 B WIND D 27 F 12 DRY T 62.0 WET T 57.0  
BAR 21 WEA 1 CL T 2 C 6 VIS SEA 04'  
SWELL DIR HT PER  
TCS 0°B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



17

70 75 80 85 90  
17-000

6 IV 67

177-67-6

85 92 4-1



SIO NO 879 18 KEY 33126  
NODC NO 14892 CARD NO 18 GCT 0414 DATE IV-6-67

VESSEL SHEARWATER

LAT 33° 10' N LONG 126° 28' W DEPTH 2222 SPD

SURF T 57.0 B WIND D 29 F 07 DRY T 56.0 WET T 53.0

BAR 20 WEA 1 CL T 6 C 5 VIS SEA 02'

SWELL DIR HT PER

TCS 0° DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



18

70 75 80 85 90  
100  
50  
100  
150  
200  
250  
300  
350  
400  
50



SIO NO 879 19 KEY 32126  
NODC NO 14892 CARD NO 19 GCT 0816 DATE IV-6-67

VESSEL SHEARWATER

LAT 32°30' N LONG 126°12' W DEPTH 2395 SPD

SURF T 58.0 B WIND D 23 F 08 DRY T 57.0 WET T 56.0

BAR 21 WEA 5 CL T 5 C 5 VIS SEA 03'

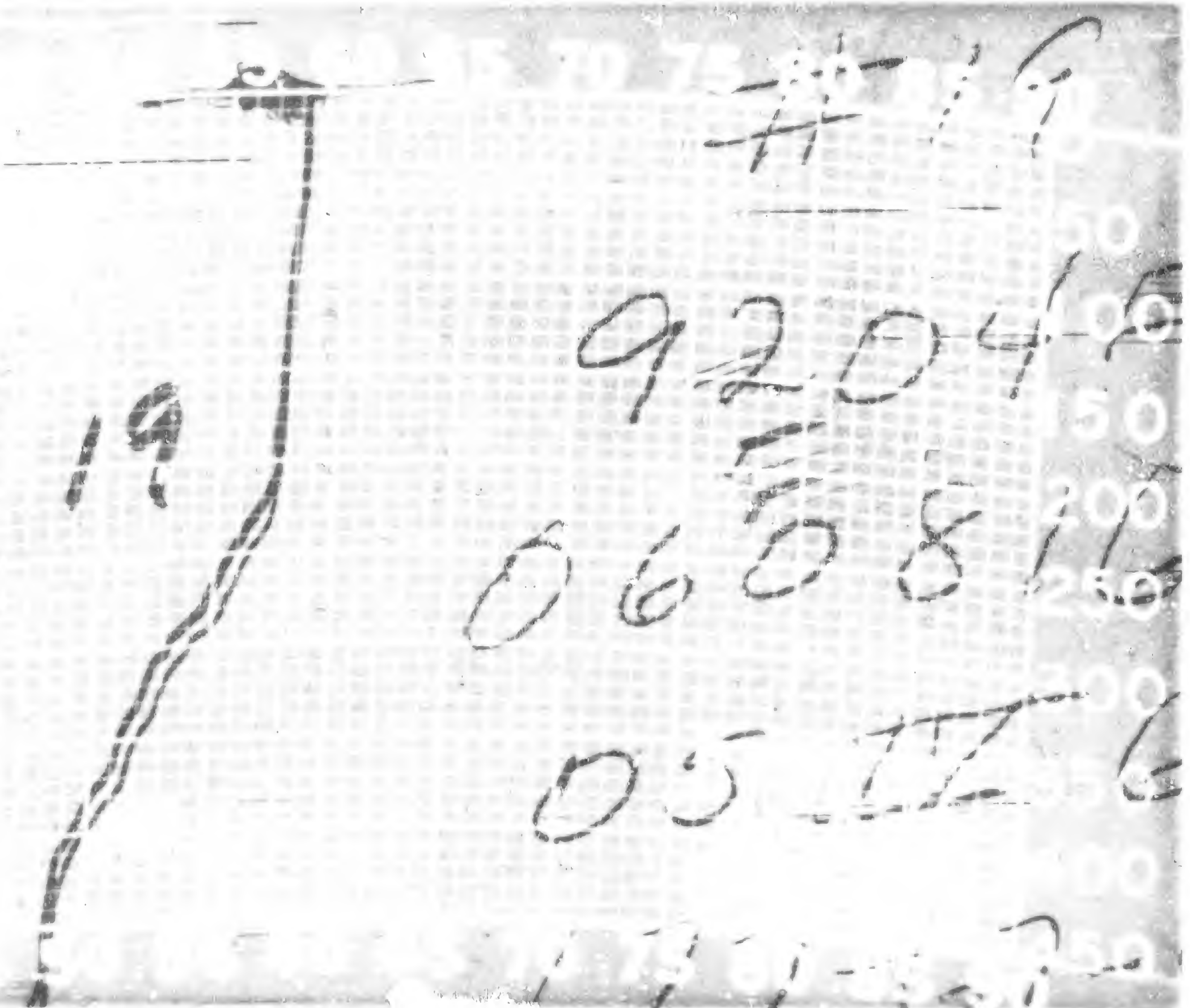
SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879

20

KEY

32125

NODC NO 14892

CARD  
NO

20

GCT

1204

DATE

IV - 6 - 67

VESSEL

SHEARWATER

LAT

32°30' N

LONG

125°23' W

DEPTH

2320

SPD

SURF T

WIND D

23 F 08

DRY T

57.0

WET T

56.0

BAR

19

WEA

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VIS

SEA

03'

SWELL DIR

HT

PER

TCS

0°B

DCS

-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HC PUBL 606c (REV 1966) Scripps Institution of Oceanography

20-1204

6 IV 47

20

177-67-02

12-47-04



SIO NO 879

21

KEY

32124

NODC NO 14892 CARD NO 21

GCT 1602

DATE

IV-6-67

VESSEL SHEARWATER

LAT 32°30' N LONG 124°30' W DEPTH 2400 SPD

SURF T 58.0 B WIND D 25 F 15 DRY T 59.0 WET T 57.0

BAR 19 WEA 6 CL T 4 C 4 VIS SEA 05'

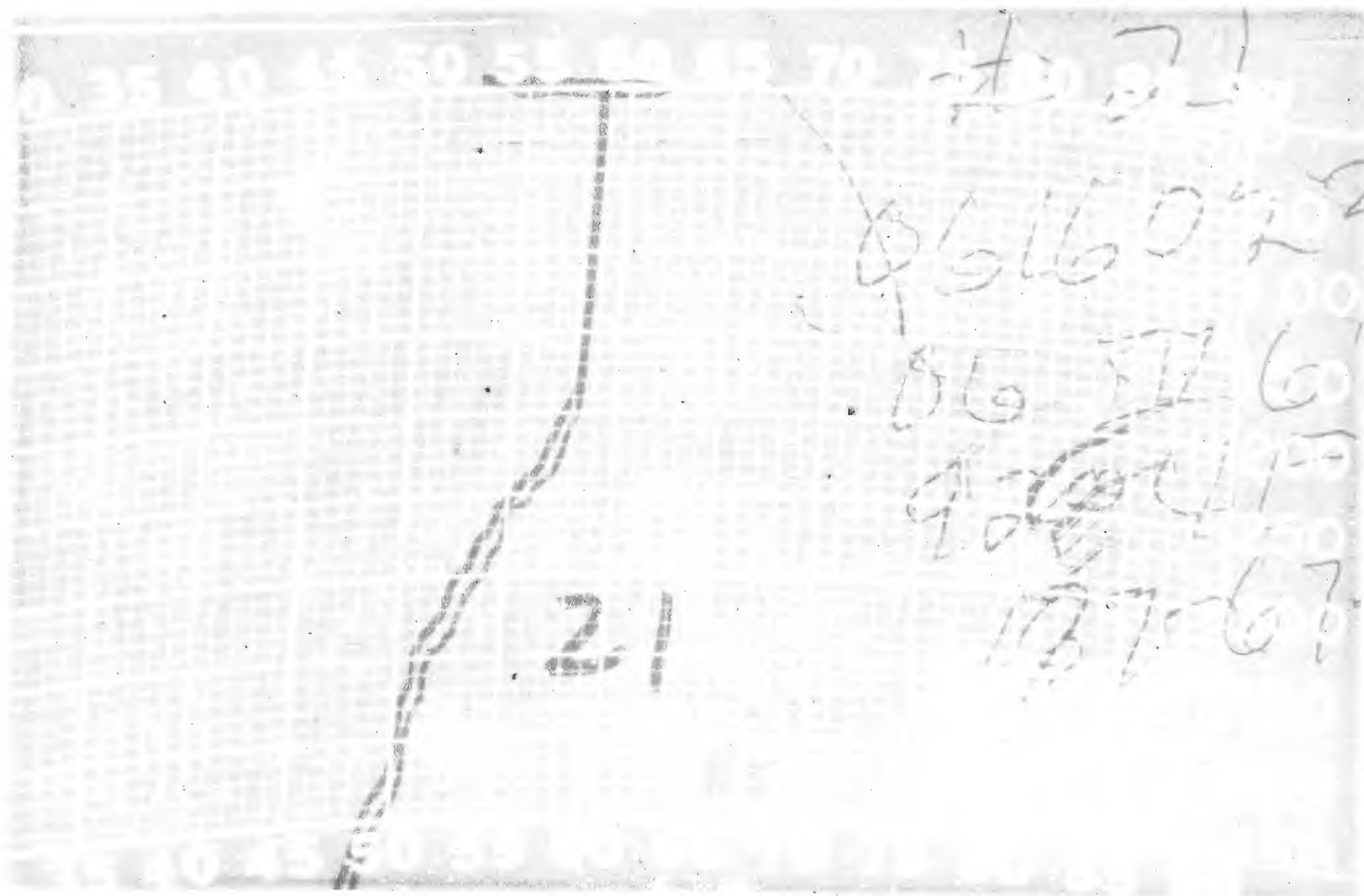
SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1936) Scripps Institution of Oceanography





SIO NO 879

22

KEY

32123

NODC NO 14892

CARD  
NO

22

GCT 2030

DATE IV-6-67

VESSEL SHEARWATER

LAT 32°32' N LONG 123°51' W

DEPTH 2480

SPD

SURF T

WIND D 25 F 10

DRY T 63.0

WET T 60.0

BAR

20

WRA

1

CL T

5

C

7

VIS

SEA

05'

SWELL DIR

HT

PER

TCS

0'8

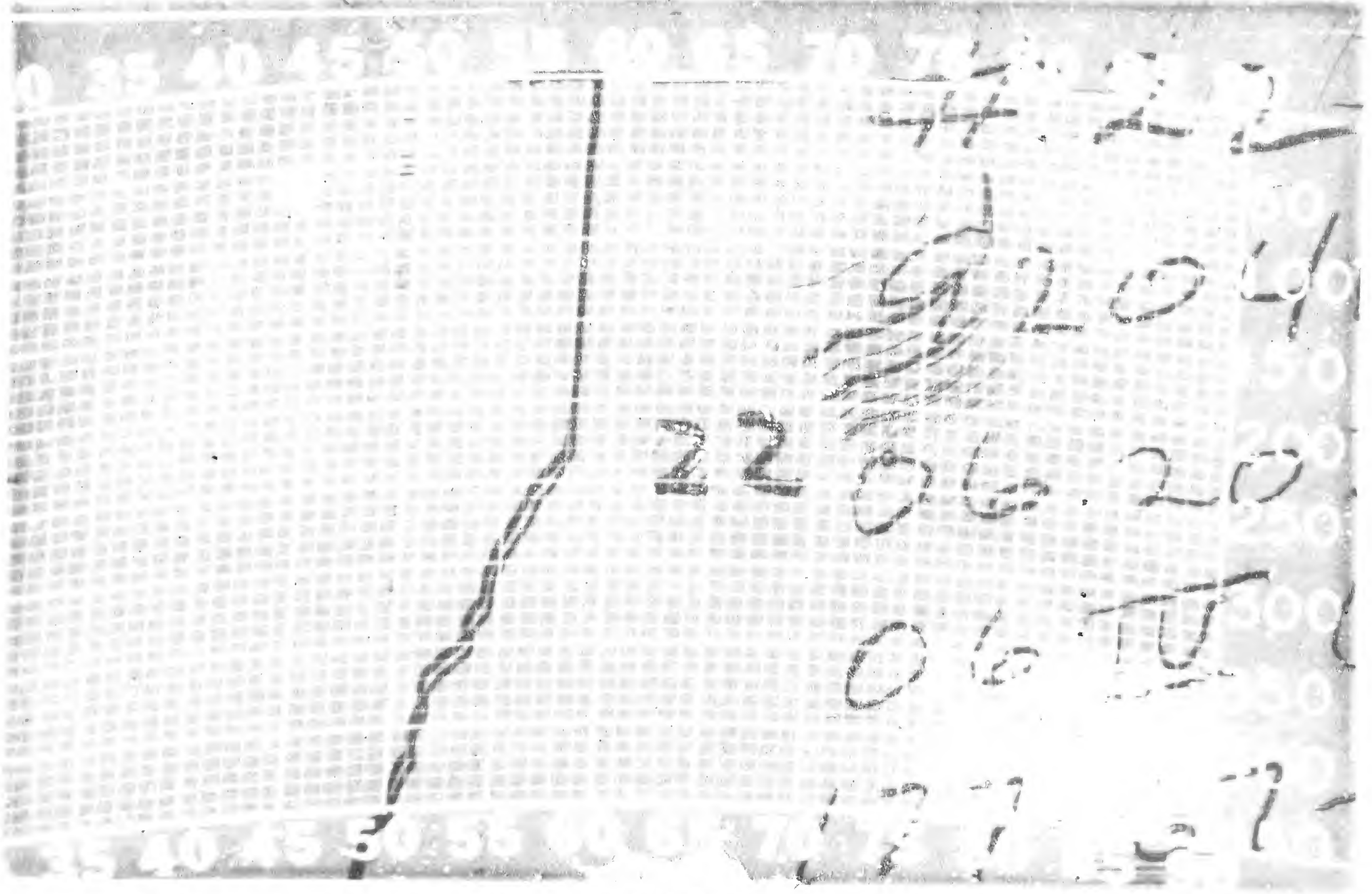
DCS

-10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



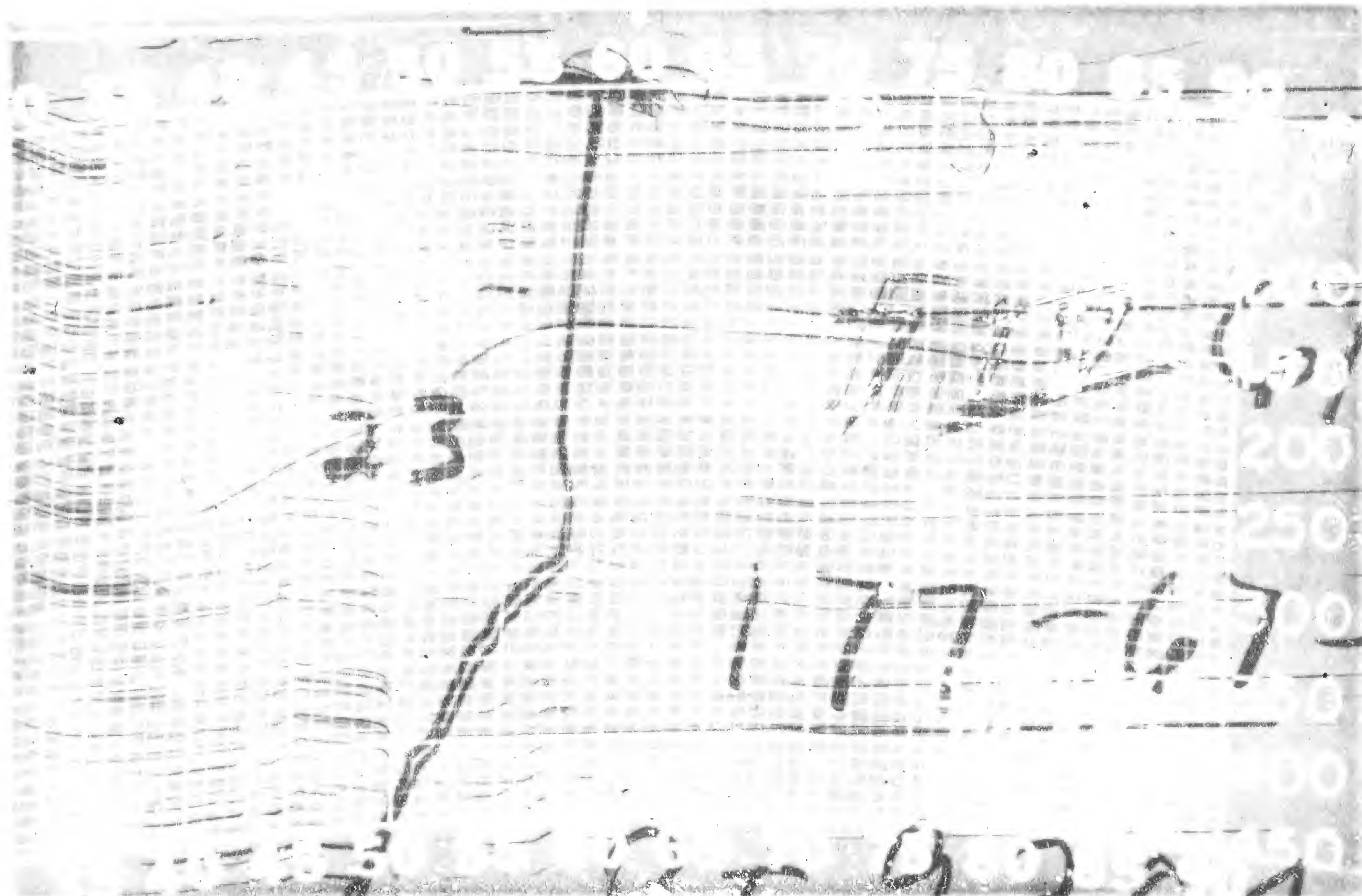


SIO NO 879 23 KEY 32123  
NODC NO 14892 CARD NO 23 GCT 0005 DATE IV-7-67  
VESSEL SHEARWATER  
LAT 32°31' N LONG 123°00' W DEPTH 1990 SPD  
SURF T WIND D 25 F 14 DRY T 62.0 WET T 58.0  
BAR 19 WEA 1 CL T 8 C 5 VIS SEA 04'  
SWELL DIR HT PER  
TCS 0'B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879 24 KEY 32122  
NODC NO 14892 CARD NO 24 GCT 0422 DATE IV-7-67

VESSEL SHEARWATER

LAT 32°27'N LONG 122°12'W DEPTH 2100 SPD

SURF T 58.0 B WIND D 23 F 10 DRY T 58.0 WET T 57.0

BAR 18 WEA 1 CL T 3 C 3 VIS SEA 04'

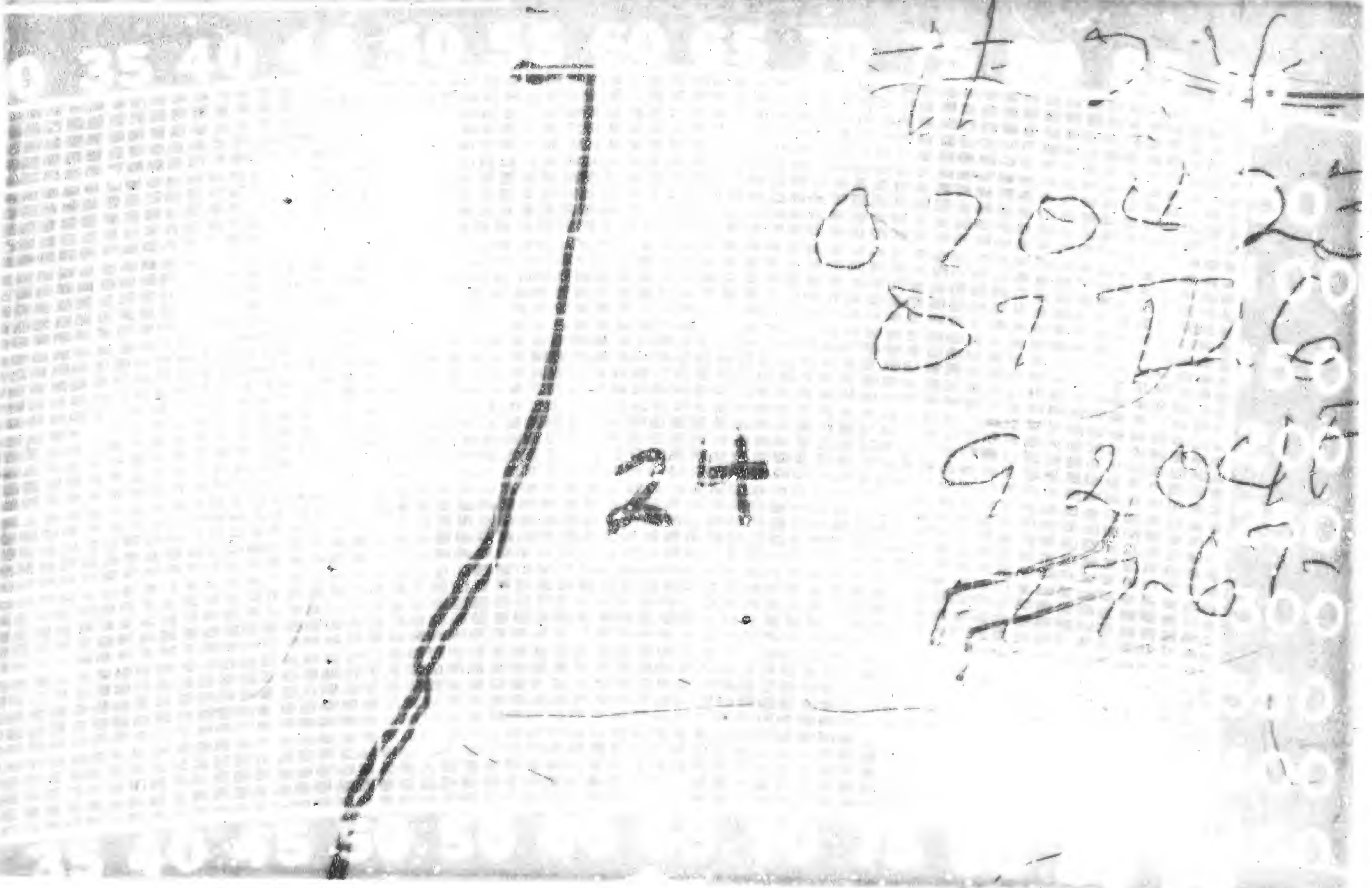
SWELL DIR. HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6066 (REV 1956) Scripps Institution of Oceanography





SIO NO 879 25 KEY 32121  
NODC NO 14892 CARD NO 25 GCT 0820 DATE IV-7-67

VESSEL SHEARWATER

LAT 32027' N LONG 121022' W DEPTH 2080 SPD

SURF T WIND D 22 F 15 DRY T 57.0 WET T 56.0

BAR 19 WEA 1 CL T 8 C 3 VIS SEA 05'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

#25

9-20 4/5

25 0708 2.5

07 11 600

77-10-1-1



SIO NO 879 26 KEY 32121  
NODC NO 14892 CARD NO 26 GCT 1203 DATE TV-7-67

VESSEL SHEARWATER

LAT 32°02' N LONG 121°00' W DEPTH 2000 SPD

SURF T 57.0 B WIND D 25 F 15 DRY T 59.0 WET T 58.0

BAR 18 WEA 1 CL T 8 C 5 VIS SEA 05'

SWELL DIR HT PER

TCS 0° B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 605c (REV 1956) Scripps Institution of Oceanography

26

24-12,0

7-47

177-67-0

13-92-4-1



SIO NO 879 27 KEY 31121

NODC NO 14892 CARD NO 27 GCT 1607 DATE IV-7-67

VESSEL SHEARWATER

LAT 31°40' N LONG 121°42' W DEPTH 2000 SPD

SURF T WIND D 31 F 10 DRY T 59.0 WET T 56.0

BAR 19 WEA 1 CL T 8 C 4 VIS SEA 05'

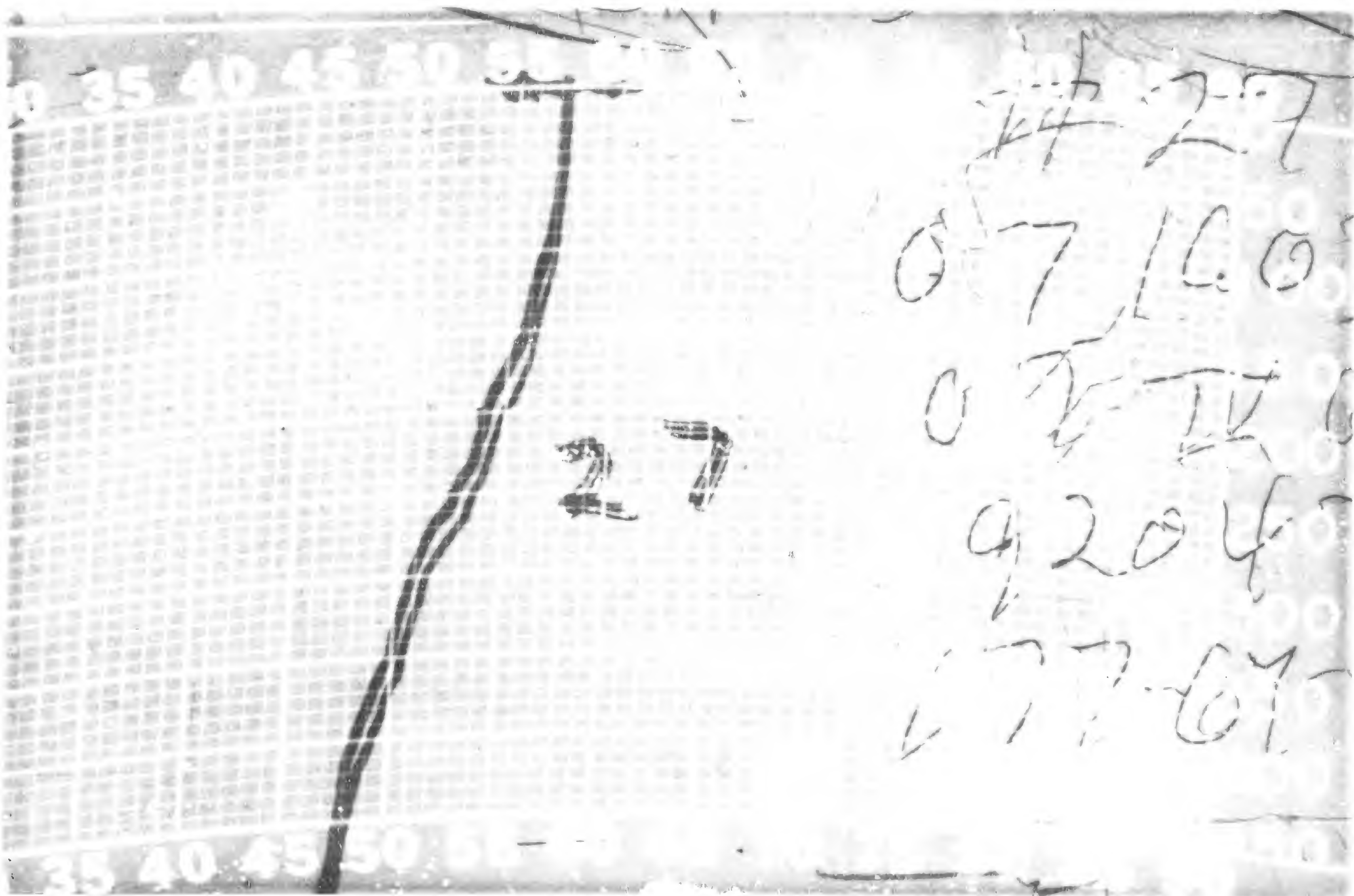
SWELL DIR HT PER

TCS 0.8 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879 28 KEY 31122

NODC NO 14892 CARD NO 28 GCT 2040 DATE TV-7-67

VESSEL SHEARWATER

LAT 31042' N LONG 122023' W DEPTH 2000 SPD

SURF T 58.0 B WIND D 34 F 20 DRY T 59.0 WET T 53.0

BAR 21 WEA 1 CL T 8 C 4 VIS SEA 08'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography

#28

9204/4

07204/6

7 IV 67

122-100-9

28



SIO NO 879 29 KEY 31123  
NODC NO 14892 CARD NO 29 GCT 0003 DATE TV-8-67  
VESSEL SHEARWATER  
LAT 31°42' N LONG 123°04' W DEPTH 2300 SPD  
SURF T WIND D 34 F 20 DRY T 58.0 WET T 54.0  
BAR 21 WEA 1 CL T 8 C 4 VIS SEA 06'  
SWELL DIR HT PER  
TCS 0°8 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

29

29-000

8 IV 600

177-67

3-22-24

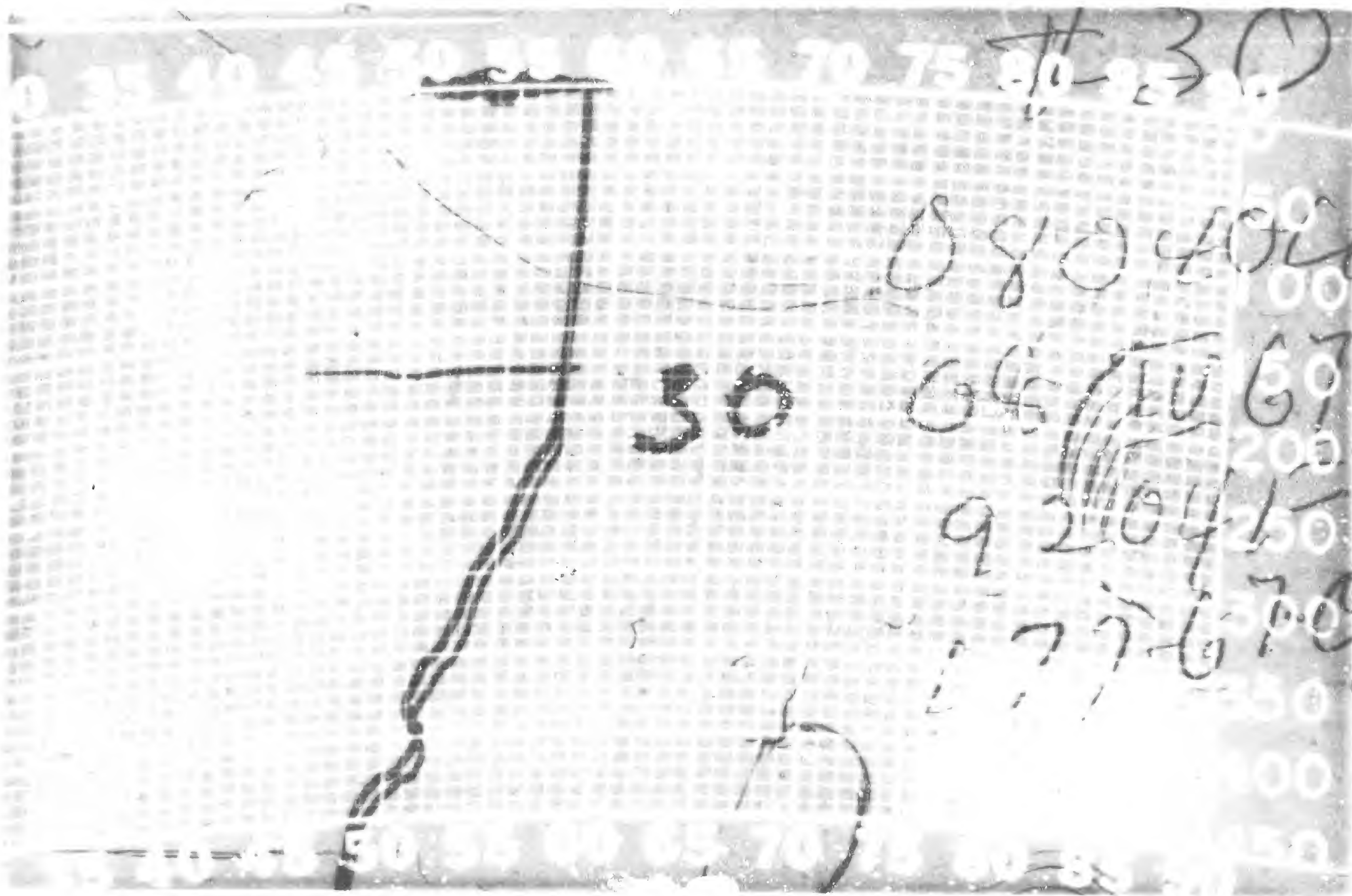


SIO NO 879 30 KEY 31123  
NODC NO 14892 CARD NO 30 GCT 0404 DATE IV-8-67  
VESSEL SHEARWATER  
LAT 31040' N LONG 123052' W DEPTH 2100 SPD  
SURF T WIND D 36 F 14 DRY T 57.0 WET T 52.0  
BAR 21 WEA 1 CL T 6 C 6 VIS SEA 06'  
SWELL DIR HT PER  
TCS 0'8 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879 31 KEY 31124  
NODC NO 14892 CARD NO 31 GCT 0805 DATE IV-8-67

VESSEL SHEARWATER

LAT 31°40' N LONG 124°42' W DEPTH 2560 SPD

SURF T WIND D 01 F 12 DRY T 55.0 WET T 51.0

BAR 23 WEA 1 CL T 8 C S VIS SEA 06'

SWELL DIR HT PER

TCS 0' B DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

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92045

31/08080508

08 III 69

177-67-0



SIO NO 879 32 KEY 31125  
NODC NO 14892 CARD NO 32 GCT 1208 DATE IV-8-67  
VESSEL SHEARWATER  
LAT 31°40' N LONG 125°27' W DEPTH 2420 SPD  
SURF T 57.5 B WIND D 36 F 12 DRY T 54.0 WET T 52.0  
BAR 23 WEA 1 CL T 6 C 4 VIS SEA 05'  
SWELL DIR HT PER  
TCS 0.8 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography

32-

32-120

8 IV 47

177-47-200

BT 92047

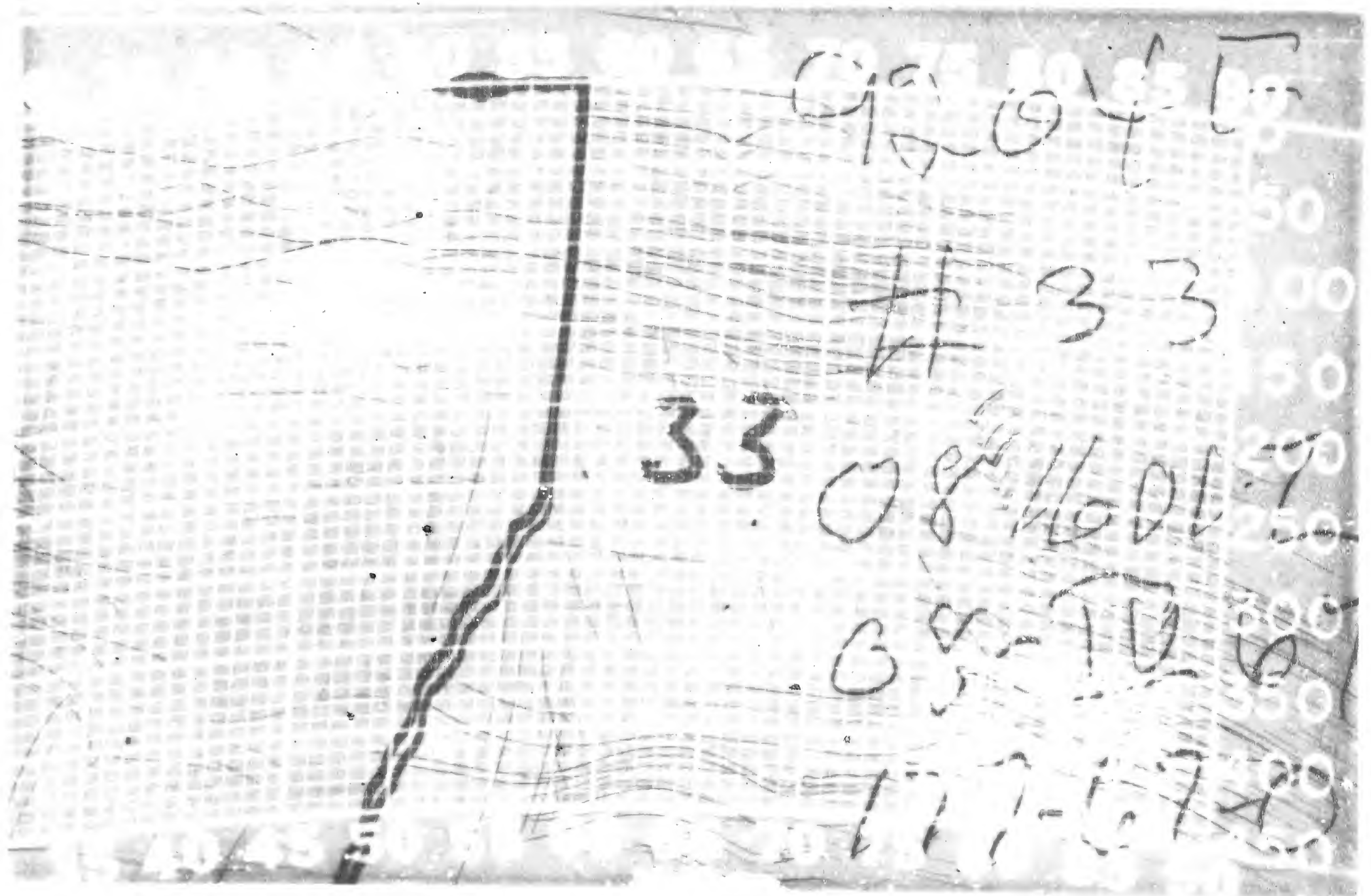


SIO NO 879 33 KEY 31126  
NODC NO 14892 CARD NO 33 GCT 1601 DATE IV-8-67  
VESSEL SHEARWATER  
LAT 31°40' N LONG 126°08' W DEPTH 2200 SPD  
SURF T 58.0 B WIND D 04 F 13 DRY T 54.0 WET T 52.0  
BAR 24 WEA 2 CL T 8 C 8 VLS SEA 04'  
SWELL DIR HT PER  
TCS 0'8 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography





SIO NO 879

34

KEY

30126

NODC NO 14892

CARD  
NO

34

GCT 2135

DATE IV-8-67

VESSEL SHEARWATER

LAT 30°50' N LONG 126°26' W

DEPTH 2480 SPD

SURF T 60.0 B WIND D 03 F 09 DRY T 59.0 WET T 53.0

BAR 24 WEA 1 CL T 8 C 2 VIS SEA 04'

SWELL DIR HT PER

TCS 0'S DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 606c (REV 1956) Scripps Institution of Oceanography

# 34

9204

08 213

08 III

177-107-13

34



SIG NO 879 35 KEY 30125  
NODC NO 14892 CARD NO 35 GCT 0021 DATE IV-9-67

VESSEL SHEARWATER

LAT 30°50' N LONG 125°54' W DEPTH 2300 SPD

SURF T 59.5 B WIND D 02 F 15 DRY T 59.0 WET T 53.0

BAR 24 WEA 1 CL T 8 C 3 VLS SEA 06'

SWELL DIR HT PER

TCS 0'B DCS -10'

MAY 2 F 1967

- WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography

45 50 55

35-000

09 班

177-67

3-2304

35

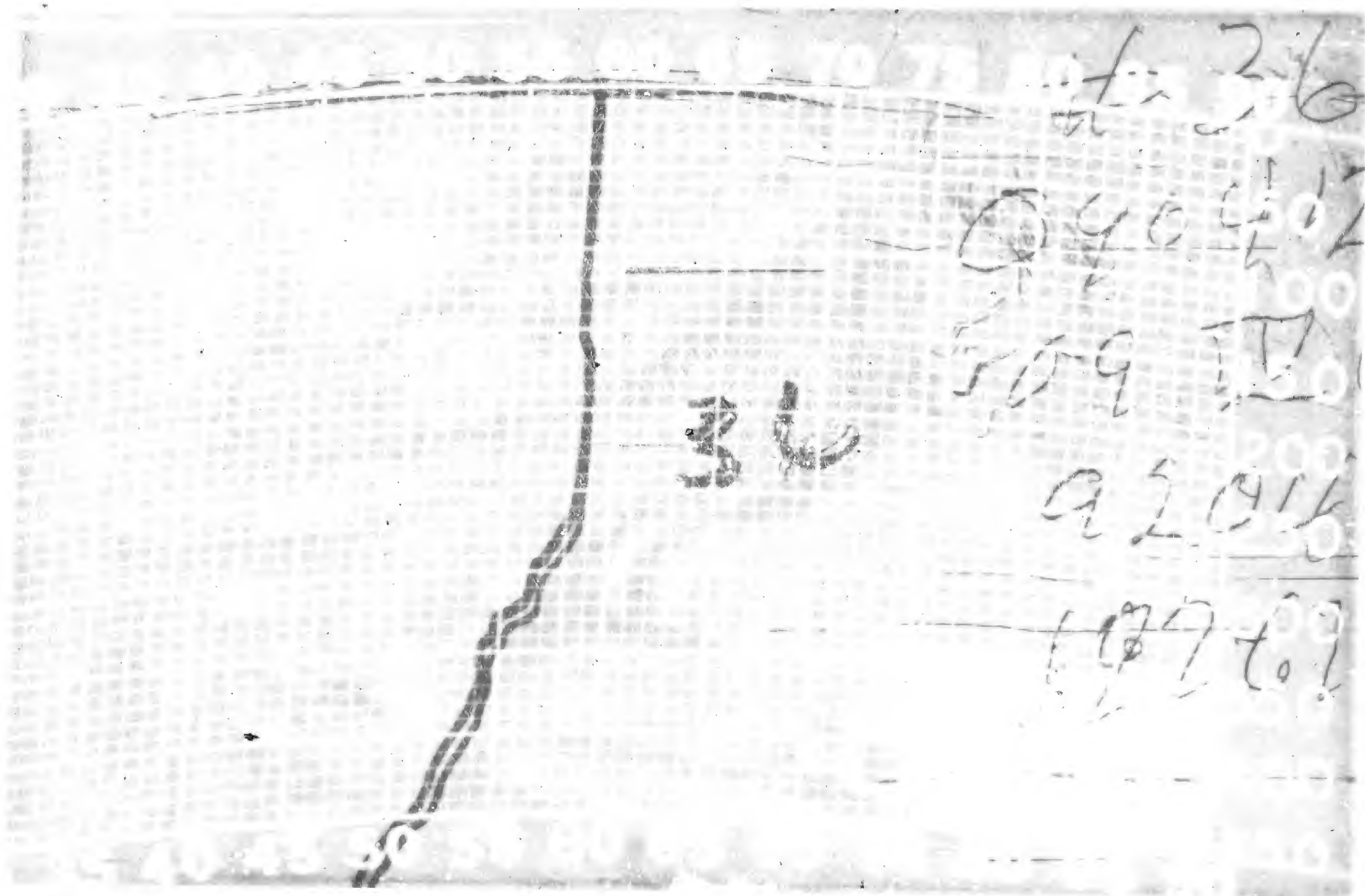


SIO NO 879 36 KEY 31125  
NODC NO 14892 CARD NO 36 GCT 0412 DATE IV-9-67  
VESSEL SHEARWATER  
LAT 31°10' N LONG 125°47' W DEPTH 2300 SPD  
SURF T 58.1 B WIND D 02 F 14 DRY T 58.0 WET T 52.0  
BAR 23 WEA 1 CL T 8 C 3 VIS SEA 04'  
SWELL DIR HT PER  
TCS 0' B DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIO NO 879 37 KEY 31124  
NODC NO 14892 CARD NO 37 GCT 0805 DATE IV-9-67

VESSEL SHEARWATER

LAT 31°04' N LONG 124°51' W DEPTH 2240 SPD

SURF T WIND D 02 F 12 DRY T 58.0 WET T 52.0

BAR 23 WEA 1 CL T 8 C 3 VIS SEA 04'

SWELL DIR HT PER

TCS 0.8 DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 6060 (REV 1956) Scripps Institution of Oceanography



437

92.00

640.80

0411.10

72.00

37





SIO NO 879 38 KEY 30124  
NODC NO 14892 CARD NO 38 GCT 1204 DATE IV-9-67

VESSEL SHEARWATER

LAT 30°57' N LONG 124°02' W DEPTH 2170 SPD

SURF T WIND D 02 F 14 DRY T 58.0 WET T 56.0

BAR 23 WEA 1 CL T 6 C 3 VIS SEA 05'

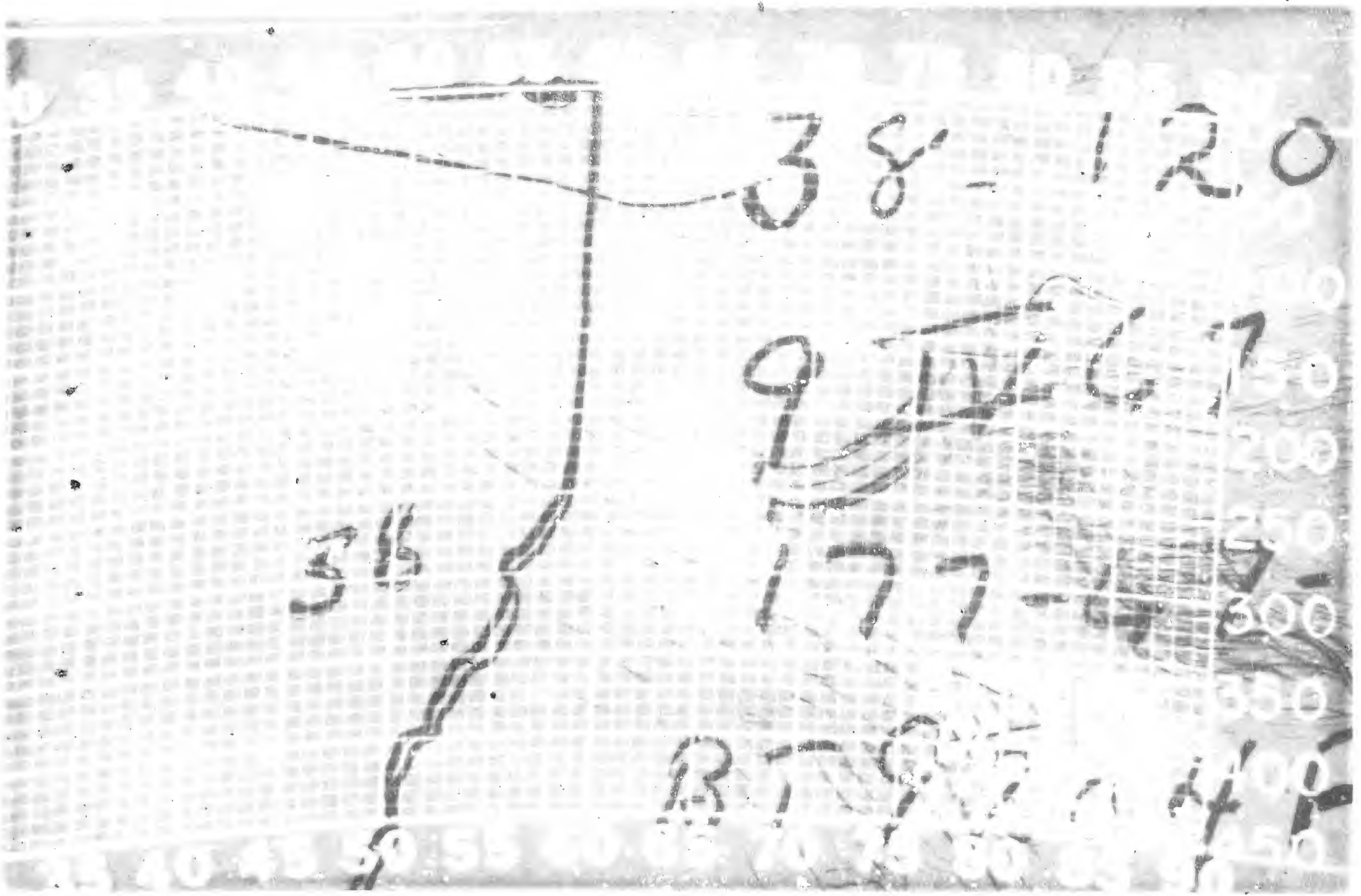
SWELL DIR HT PER

TCS 0.3 DCS -10'

MAY 26 1967

### WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 6060 (REV 1956) Scripps Institution of Oceanography





SIG NO 879 39 KEY 30123

NODC NO 14892 CARD NO 39 GCT 1603 DATE IV-9-67

VESSEL SHEARWATER

LAT 30°54' N LONG 123°18' W DEPTH 2240 SPD

SURF T WIND D 36 F 14 DRY T 58.0 WET T 55.0

BAR 23 WEA 1 CL T 3 C 5 VIS SEA 05'

SWELL DIR HT PER

TCS 0°15' DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 6060 (REV 1956) Scripps Institution of Oceanography

4626

9-16032

OR 126

9204

177-172

39





SIC NO 878

40

KEY

30122

NODC NO 14892 CARD NO

40

GCT 2020

DATE IV-9-67

VESSEL SHEARWATER

LAT 30°51' N LONG 122°24' W DEPTH 2437 SPD

SURF T 59.5 B WIND D 35 F 12 DRY T 60.0 WET T 59.0

BAR 24 WEA 1 CL T 3 C 5 VIS SEA 05'

SWELL DIA HT PER

TCS 0.3 DCS -10'

MAY 26 1967

WMO Codes Used

CODE GIVEN IN US NAVY NO PUBL 6060 (REV 1956) Scripps Institution of Oceanography

#4 40

9204

40

9202

09 III 60

177-60700



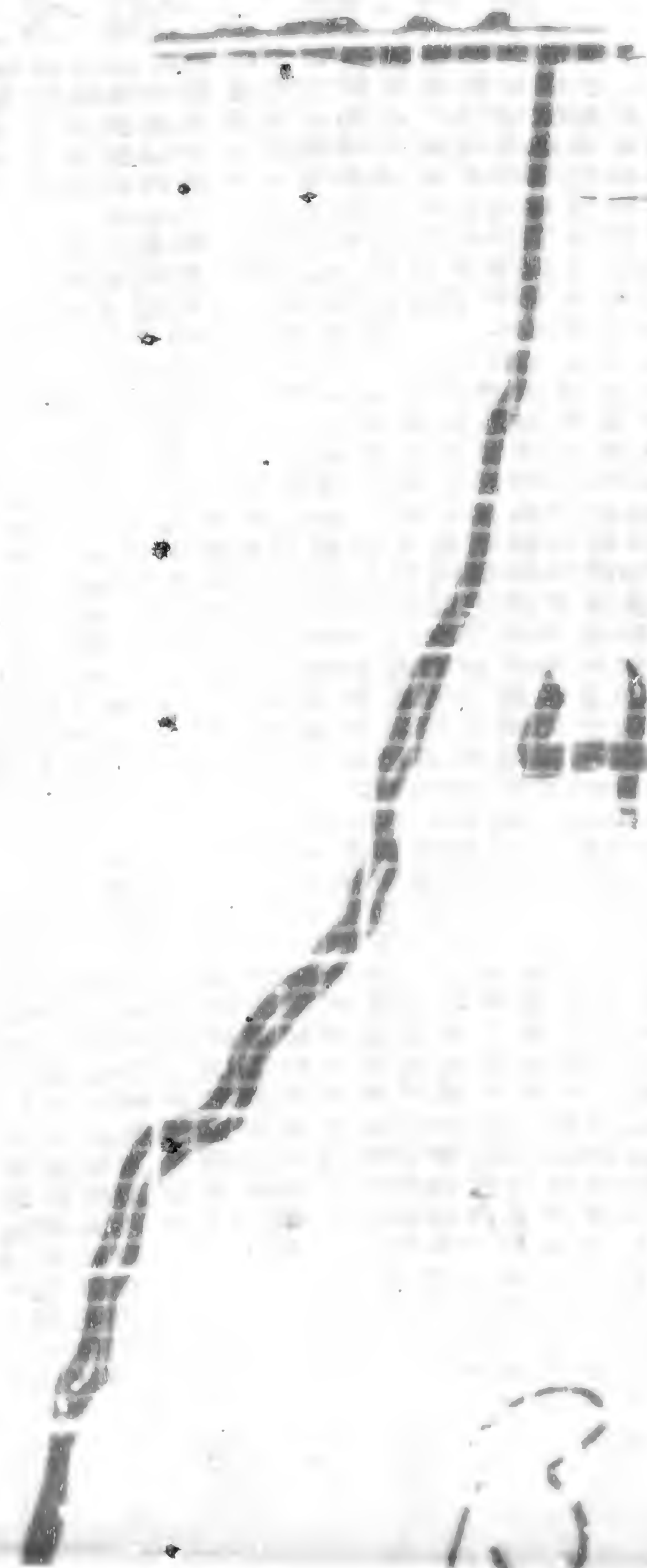


SIO NO 879 41 KEY 31121  
NODC NO 14892 CARD NO 41 GCT 0003 DATE IV-10-67  
VESSEL SHEARWATER  
LAT 31°50' N LONG 121°35' W DEPTH 2020 SPD  
SURF T WIND D 35 F 12 DRY T 60.0 WET T 57.0  
BAR 22 WEA 1 CL T 6 C - VIS SEA 06'  
SWELL DIR HT PER  
TCS 0'B DCS -10'

MAY 2 1967

### WMO Codes Used

CODE GIVEN IN US NAVY HO PUBL 606c (REV 1956) Scripps Institution of Oceanography



41-000

41

1011

1775

RT 99

100

150

200

250

300

350

400

450



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POST OFFICE BOX 109  
LA JOLLA, CALIFORNIA 92037

June 20, 1967

Mr. Brian A. Harrington  
Smithsonian Institution  
United States National Museum  
Washington, D. C. -20560

Dear Mr. Harrington:

In accordance with your request to Mrs. Robinson in your letter dated 29 April, 1967, we have mailed to your Pacific Program the Bathythermograph Prints for your four cruises.

The first cruise, # 877 will show two changes in longitude for slides # 21 and # 38. On slide # 21 the longitude was changed from 126° to 123°. On slide # 38 the change was from 124° to 122°. According to our plot of the cruise and considering the time involved between observations, these positions appeared to be in error. Please let me know if you think our solution to this problem was incorrect.

We will be happy to process your slides at any time.

Sincerely,

*Imogene B. McKinley*

Imogene B. McKinley  
Bathythermograph Processing  
Bldg. T-30

EAL 5

PRELIMINARY REPORT  
EASTERN AREA CRUISE 5  
11-24 March 1977

including  
EASTERN GRID SURVEY 4

Prepared by  
Brian Harrington (Grid Section)

and  
David Burckhalter (Non-grid)



This report is a summary of observations and collections made by P.O.B.S.P. personnel in the eastern Pacific Ocean from 11-24 March, 1967. Participating personnel included Brian Harrington (biologist-in-charge), David Burckhalter, and James Lewis. Superior cooperation was received from the officers and crew of the U.S.N.S. SHEARWATER (T-AG 177). The grid track was followed as closely as circumstances would allow, but due to equipment failure and weather conditions a few deviations will be noted. First, on the night of 14-15 March a departure from the grid was made at point "D" in order to go to Port Hueneme<sup>for repair</sup> of the ship's steering. After two days in port, we returned to point "D" on the night of 17-18 March. The biologist in charge does not feel that this interruption had any significant effect on grid observation data. Other deviations from the nominal track will be noted between points "G" and "H", and can be accounted for by the fact that the LCRAN was inoperative, and due to cloudy weather there were no accurate fixes. Although not shown on map one, it is quite possible that the track between points "M" and "O" was also inaccurate for the same reason. Diurnal positions in this section of the grid should be considered accurate only to the nearest ten miles, and within five miles over the remainder of the grid cruise. All nocturnal positions are probably within ten miles.

#### Eastern Grid Survey Number 4

The eastern grid survey was conducted from 1200 hours 12 March until 2345 hours 22 March, 1967 with an interruption of three days from 14-17 March. A total of 89.6 hours of diurnal observation were conducted over 826 linear miles. A summary may

be found in table 1. An additional 14.5 of nocturnal survey were conducted (see table 5.)

Weather data during this survey were recorded on appropriate forms and ADP sheets. In general, light winds and seas predominated; a high pressure system in the area was a major influence. Thus, in general, observation conditions were quite similar to those on the last EAC cruise, and hence the two can be reasonably compared. Also diurnal survey was conducted in approximately the same areas on both cruises thus allowing further comparability. But, as will be discussed later, there were major differences in the populations found.

Thirty bathothermographs were taken over about 3/5 of the grid track at four hour intervals; a damaged cable prevented drops over the last portion.

#### Flocking

With the exception of a few groups of storm petrels and Red phalaropes, flocking activity was not observed during this survey. Flocking in the above species will be discussed in the species accounts.

#### Food Sources

Over previous EAC cruises only one school of feed-fish has been noted. During this survey numerous schools of small fish were frequently noted at night over the western extreme of the southern two thirds of the grid. None were seen during daylight hours. It would seem likely that such an abundance would attract fish-feeding birds; but such did not seem to be the case. In fact, fewer fish-feeding species were noted than on any of the previous surveys, little doubt due to the fact that they have migrated northward.



For purposes of discussion the grid has been divided from both north to south (see table 2) and from east to west (see table 3). These divisions are shown on map 2.

#### Grid Species Accounts

Black-footed Albatross (Diomedea nigripes) 46 + 1 nocturnal

Overall grid density has risen slightly since last cruise. But north-south density distribution has changed sharply, with a very high density in the north and low in the south. This is a reversal of the distribution found on previous surveys.

East-west distribution is essentially unchanged from last cruise.

Although somewhat higher than recent surveys, the density does not approach that found in January.

Laysan Albatross (Diomedea immutabilis) 3

This species was last seen in the grid in mid February, but numbers still remain quite low when compared to the January population.

Fulmar (Fulmaris glacialis) 9

The rather pronounced drop since last survey probably reflects a migratory exodus from this region; This was suspected of being underway in early March. All sightings were of dark phase birds, and all were in the northeast portion of the grid.

Sooty Shearwater (Puffinus griseus) 1  
Sooty/Slenderbill (Unidentified) 1

Both sightings were in the eastern half of the grid.

Leach's Petrel (Oceanodroma leucorhoa) 139  
Storm Petrel sp. (Unidentified) 21

Although not usually recorded to species on the daily log

all the black storm petrels noted this cruise were probably Leach's. Density distribution was noticeably different in the north section where on previous cruises it has not exceeded .032 birds per square mile. This survey a density of .113 (N=28) was noted in the north.

A brief review of regional density suggests that the Leach's petrel probably moves around a great deal in the winter range. Besides the fluctuations noted above, the central area has varied from .106 to .199 b/sq.mi. and the south from .153 to .308. East-west densities have also varied considerably. As noted in previous reports, some of this variation may be accounted for by differences in observation conditions.

Six Leach's Petrels were collected in the grid; of four males two were recorded as having enlarged gonads, and one of two females had slightly enlarged ova.

Fork-tailed Petrel (Oceanodroma furcata) 2

Both sightings were in the north section. In view of previous survey results it does not seem reasonable to assume that the apparent population decline is significant.

Pterodroma sp. (Unidentified) 7

Of seven sightings, six (two birds each in three sightings) were noted in the western half of the grid. Only two were seen reasonably well, and these were believed to have been White-winged Petrels (P. leucoptera), but a positive field identification was not made.

Red Phalarope (Phalaropus fulicarius) 291 + 4 nocturnal

Red Phalarope were the most abundant species in the grid during this cruise. Most were in flocks, but many were also recorded



as single birds. Both males and females were collected. Most had some red feathers of the nuptial plumage present, but none were noted to have significantly enlarged gonads. But the heavy fat condition on most specimens as well as the apparently increasing flocking tendency suggests that a migratory movement may be under way or imminent.

Density distribution on this cruise was different from that recorded last month when the north and south sections were favored. This cruise no birds were seen in the north section, about 65% were in the central section, and the remainder were in the south. East-west distribution was also different from last month when the western section was highly favored. This cruise the western area still had the most dense population, but the east had fifteen times as many birds as last month.

These changes when combined with the fact that the population has been steadily increasing suggests that, if not migrating, the population density is quite static.

Pomarine Jaeger ( <u>Stercorarius pomarinus</u> )	2
Jaeger sp. (Unidentified)	1

The reduction of numbers suggests that the higher numbers noted last month were indicative of a migration peak. As in past cruises, all sightings were in the eastern portion of the grid.

Glaucous-winged Gull ( <u>Larus glaucescens</u> )	4
---	---

Three of the four sightings were in the north section, and the other was in the central section. All were immature birds.

The sharp overall reduction of numbers indicates that this species has probably migrated to the north.

Herring Gull ( <u>Larus argentatus</u> )	119
--	-----

The sharp change of distribution since previous cruises is

most logically explained by a migratory movement. No Herring Gulls were identified in the southern section during this cruise, and a sharp decline was noted in the central section; An increase was noted in the north section. A noticeable decline in the western section also suggests that a movement towards the breeding islands is occurring.

Age composition in various sections was again recorded. In the north 83% (N=107) of the Herring gulls were adults, while 91% (N=19) were adults in the central area. In the eastern half 81% (N=98) were adults, and 95% (N=19) were adults in the west.

Gonad condition on three adult females were slightly advanced with the largest ova measuring 3mm. All had moderate fat and moderate body molt. The yellowness of the bills on all specimens was noticeably brighter than on previous surveys.

Black-legged Kittiwake (Rissa tridactyla) 29

Like the other species of gulls, the Kittiwakes showed a sharp decline of numbers. All sightings were in the north section, with two thirds being in the eastern half. Adults comprised 91% of the birds for which age was determined. In the east 45% (N=18) were adults, while in the west 90% (N=10) were adults.

Rhinoceros Auklet (Cerorhinca monocerata) 4

All sightings were in the northeast portion of the grid.

Horned Puffin (Fratercula corniculata) 1

One bird was well observed in the northeast section.



### Grid Mammals

Changes in mammal populations since previous cruises would seem quite significant. In the north section mammals were conspicuous by their absence. Where on previous cruises we would normally see up to thirty Fur Seals (Callorhinus ursinus) only four were identified. Two additional seals were unidentified. No other mammals were seen in the north section.

The central section was heavily populated with mammals. Seals were represented by one bull Elephant Seal (Mirounga angustirostris), an unidentified sea lion, and two unidentified Otariids. Whales were numerous and included what was believed to have been a Baird's Beaked Whale (Berardius bairdii). Twenty-nine Sperm Whale (Physter catodon) and 28 Pilot Whales (Globicephala scammonii) were also identified. All the Sperm Whales were travelling in a northward direction.

Porpoise in the central section were of two identified species. Fourteen Bottle-nosed Dolphin (Tursiops truncatus) were seen in two groups, each time in company with another species (Pilot whale and Risso's Dolphin). Five Risso's Dolphin (Grampus griseus) were tentatively identified and photographed. In addition to those photographed, five unidentified porpoise were seen.

The south section also had a good number of mammals. Otariids were represented by two unidentified sea lions. Twenty five Pilot Whales and five Sperm Whales were also seen. Porpoise were numerous, but most were unidentified. Those which were well seen included Bottle-nosed Dolphin, (3), Risso's Dolphin (5), 12 Striped Dolphin (Lagenorhynchus obliquidens) and two Baird's Dolphin (Delphinus delphis). The latter two species were in the same school, as were the Risso's and Bottle-nosed Dolphin. Of the 53 unidentified por-

poise, 47 were in three schools which were suspected of being a type of spinner porpoise. None were well seen, and all avoided the ship when chased.

The increased number of marine mammals in the grid may possibly be due to the attraction of more feed fish as discussed earlier in the report,<sup>or</sup> might be due to a seasonal migration. Little is known about migration in most of the marine mammals, so no statement can be made. No doubt the exodus of the Fur Seals is due to a migration but other changes must remain unexplained.



### Non-Grid Survey No.5

Once again the non-grid survey includes observations made while proceeding to (northern section) and returning from (southern section) the grid area. In addition, due to ship troubles which necessitated return to port, an extra day of non-grid observations was made in the northern section. For the days of March 11, 12, and 17 observations were carried on for 13.4 hours over a distance of 143 linear miles. On March 23 sightings were conducted for 11.9 hours over a distance of 66 linear miles. A total of 25.3 daylight hours of observation was conducted over 209 linear miles (see map). All non-grid observations are summarized in Table 7.

#### Schedule

	time	distance	begin observations	cease observations
Mar. 11	2.6 hrs.	35 mi.	1515 Pt. Fermin	1800 33°55'N 118°51'W
Mar. 12	5.7 hrs.	50 mi.	0620 34°38'N 121°03'W	1200 34°57'N 121°59'W
Mar. 17	5.1 hrs.	58 mi.	1300 34°09'N 119°23'W	1810 34°10'N 120°24'W
Mar. 23	11.9 hrs.	66 mi.	0620 31°41'N 120°06'W	1810 32°44'N 118°51'W

Activity in the two non-grid sections appeared to be much the same, with birds usually engaged singly in their daily activities. In the northern section, however, there was some evidence of flocking activity. Several large flocks of gulls were observed off shore\* and they accounted for more than one-half of the northern non-grid birds logged. Also a few large flocks of alciids and a few small flocks of Kittiwakes were observed a few miles off shore in the Santa Barbara channel. Since no flocking activity was noticed in the southern non-grid section, where observations were conducted as close to 50 miles near land, birds were apparently grouping only in off shore waters.

\* Off shore refers to coastal waters just off shore.

	N. section	S. section
	Mar. 11, 12, 17	Mar. 23
No. birds	1550	63
No. flocks	17	0

#### Non-Grid Species Accounts

##### Albatross

Black-foot Albatross were found to be common in both non-grid sections, although again they were not <sup>commonly</sup> seen with land in sight. Fourteen Black-foots were recorded. One Laysan Albatross was observed as we neared the first leg of the grid.

##### Shearwater/Petrels

Small procellariiforms appeared to be equally abundant in the north and south sections of the non-grid area. Fulmars (14) were the most frequently sighted; twelve were dark phase and one each being intermediate and light phase birds. In the northern section one Palefoot Shearwater and one White-rumped Storm Petrel were logged. In the southern section one Sooty/slender-bill was observed.

##### Cormorants and Pelicans

Cormorants (3) and Brown Pelicans (1) were observed only in the northern section, but not in the southern section probably due to our distance from land. I might note that Cormorants in the harbor areas appear greatly reduced in number as compared to the two previous months.

##### Black Brant

One group of eleven Black Brant was observed in the Santa Barbara channel.

##### Loons

One Loon was observed in the northern section six hours before entering the grid area. It was flying north about fifty miles from land.



## Jaegers

Jaegers were seen occasionally (9) in both non-grid sections. Five were recorded as Pomarine Jaegers, while four were recorded as Jaeger sp. One Pomarine Jaeger was observed one mile off shore in the northern section.

## Red Phalarope

Red Phalaropes (13) were commonly seen in the southern portion of the non-grid area. All occurred singly or in pairs. Once again none were sighted in the northern section.

## Gulls

As in the previous cruises Herring Gulls were infrequently observed near land; only close to the grid area were they commonly sighted. On this cruise 37 were logged (9 adults: 1 immature), 34 in the northern section and 3 in the southern section. Herring Gulls in the southern section were greatly reduced in numbers from previous cruises. As far as other kinds of gulls were concerned, great numbers of them (est. 1200), mostly California Gulls (156 positively identified), were aggregated close to shore along the Santa Barbara channel, some of which briefly followed the ship. No California Gulls were sighted in the southern non-grid section. In the northern section also observed were 11 Western Gulls (adults), 3 Glaucous-winged Gulls (immatures), 1 Ring-billed Gull (immature), and 48 Black-legged Kittiwakes (1 adult : 3 immature). In the southern section, on the other hand, Western Gulls were more commonly sighted (21, 1 adult; 1 immature, 1 collected), while only one adult Black-legged Kittiwake was seen (collected). Contrasting this survey to the one before it, Black-legged Kittiwakes were extremely abundant in the prior one (1109 birds) in the same southern area where observations were made. In the previous report, I stated that an exceptional feeding area was responsible for the large aggregation of birds. I also ruled

out migration as a possible reason for their concentrated abundance. To the assumption of migration not being a reason for their aggregations, I must make a retraction in view of more recent evidence. Since the Kittiwakes appear to have vacated a former area of high density, migration is probably the most suitable explanation for their disappearance; in the prior survey these birds must have been feeding just before migration. In addition to the single Kittiwake sighted in the southern section, one well-observed Sabine's Gull (adult) was seen there.

#### Alcids

Alcids were commonly seen in both non-grid areas, but more so in the northern section. Here flocking activity was occurring as alcids (mostly Rhinoceros Auklets) were seen mostly on the water in the largest groups with smaller bunches seemingly on the move. In the northern section the following were logged: Alcid sp. 131, Rhinoceros Auklet 170, Horned Puffin 8, Xanthus Murrelet 3, and Ancient Murrelet 1. Of the last three only 1 Horned Puffin sighting is reliable as viewing conditions were poor. We were much farther from land in the southern section than we were in the northern section and this provides a possible explanation why we saw so few alcids in the south. Here Rhinoceros Auklets were the most common (9, 1 collected) with 1 Alcid sp. and 2 Horned Puffins also being logged. Most of the Rhinoceros Auklets in the southern section were observed in ~~pairs~~ two's.



### Non-Grid Mammals

Mammals were sighted occasionally in both non-grid sections, usually singly or in small groups, but they were not nearly as frequently seen as in the previous survey. In the northern section the following kinds were logged: Seals, Sea lions, Porpoise, and Whales. These kinds with the exception of whales were also seen in the southern section. The most eventful sighting of both non-grid sections came in the southern part where three Pacific Right Whale Dolphins were well-observed. These came up to the ship and rode the wake of the bow for twenty minutes (photographs were taken). The non-grid mammals sighted are summarized below.

	Seals	Sea lions	Right W D	Striped D Porp. sp.	Whale sp.	Gray W.	
N	1	3	0	0	3	1	11
S	3	1	3	13	0	0	0





Table 2: Sectional Breakdown of Eastern Pacific Grid Bird Populations, March 12-22, 1967

	NORTH SECTION				CENTRAL SECTION				SOUTH SECTION			
	No	% of Grid Species total	% of birds in North Section	Birds per sq linear mile	No	%	%	B/sq. mi.	No	%	%	B/sq. mi.
Black-foot Albatross*	33	68.8	14.0	.034	11	22.9	3.7	.009	4	8.3	2.4	.004
Laysan Albatross	0				2	66	.7	.001	1	34	.6	.001
Fulmar	9	100	3.8	.018	0				0			
Sooty Shearwater	1	100	.4	.002								
Fork-tailed Petrel	2	100	.8	.008	0				0			
Leach's Storm Petrel	28	20.2	11.9	.113	63	45.3	21.4	.199	48	34.5	28.6	.176
Red Phalarope	0				196	67.4	66.7	1.242	95	32.6	56.5	.696
Pomarine Jaeger	2	100	.8	.004	0				0			
Glaucous-winged Gull	3	75.0	1.3	.006	1	25.0	.3	.002	0			
Herring Gull	107	90.0	45.4	.217	12	10.0	4.1	.019	0			
Black-legged Kittiwake	29	100	12.3	.059	0				0			
Rhinoceros Auklet	4	100	1.7	.032	0				0			
Horned Puffin	1	100	.4	.008	0				0			
Bird sp.	0				0				4	100	2.4	.008
Shearwater/ Petrel	1	34	.4	.002	0				2	66	1.2	.004
Sooty/Slenderbill	0				0				1	100	.6	.002
Pterodroma sp.	4	57.2	1.7	.008	2	28.6	.7	.003	1	100	.6	.002
Storm Petrel sp.	2	9.5	.8	.008	8	38.1	2.4	.022	11	52.4	6.5	.040
Jaeger sp.	1	100	.4	.002	0				0			
Gull sp.	0				0				1	100	.6	.002
Alcid sp.	9	100	3.8	.072								
Totals:	236		99.9	.593	295		100.0	1.497	168		100.0	.935
Total miles		247				316				273		

\* The total for Black-footed Albatross does not agree with the total number seen due to an allowance for birds following the ship.

Table 3: East-west sectional Breakdown of Eastern Pacific Grid Bird Populations, 12-22 March, 1977

	E A S T				W E S T			
	No.	% of Grid Species Total	% of Total birds in East half	Birds per square lin. mile	No.	% of Grid Species total	% of total birds in west half	Birds per square lin. mile
Black-foot Albatross*	30	64.	7.4	.016	17	36	5.8	.013
Laysan Albatross	2	66	.5	.001	1	34	.3	.001
Fulmar	9	100	2.2	.009	0			
Sooty Shearwater	1	100	.25	.001	0			
Fork-tailed Petrel	0				2	100	.7	.006
Leach's Storm Petrel	73	52	17.9	.150	66	48	22.4	.195
Red Phalarope	139	48	34.2	.572	152	52	52.3	.896
Pomarine Jaeger	2	100	.5	.002	0			
Glaucous-winged Gull	4	100	1.0	.004	0			
Herring Gull	98	82	24.0	.101	21	18	7.2	.031
Black-legged Kittiwake	19	66	4.7	.020	10	33	3.4	.015
Rhinoceros Auklet	4	100	1.0	.016	0			
Horned Puffin	1	100	.25	.004				
Bird sp.	0				4	100	1.4	.006
Shearwater/petrel	3	100	.7	.003	0			
Sooty/Slender	1	100	.25	.001	0			
Pterodroma sp.	1	15	.25	.001	6	85	2.1	.009
Storm Petrel sp.	10	48	2.5	.021	11	52	3.8	.033
Jaeger sp.	1	100	.25	.001	0			
Gull sp.	1	100	.25	.001	0			
Alcid sp.	<u>8</u>	90	<u>2.0</u>	<u>.032</u>	<u>1</u>	<u>10</u>	<u>.3</u>	<u>.006</u>
Totals	407		100.1	.956	291		100.7	1.211
Total miles		487				339		

\* The total for Black footed Albatross may not agree with the total number for the grid due to an allowance for those which followed the ship.



Table 4: Cruise Data Summary, Eastern Pacific Cruise 5; 11-23 March, 1967 \*

Date	11	12	13	14	17	18	19	20	21	22	23
No. hours diurnal watch	2.8	12.0	11.9	11.5	5.2	11.9	12.0	12.0	12.0	12.0	11.9
No. diurnal miles	35	97	97	112	58	121	110	130	99	119	66
No. birds	1060	135	52	105	386	24	199	155	22	61	63
birds/lin. mi.	30.2	1.38	.54	.94	6.65	.20	1.81	1.19	.22	.51	.96

\*Pertains to diurnal Only

Table 5: Summary of nocturnal observations, Eastern Grid Cruise 4

<u>Date</u>	12	13	14	18	19	20	21
Hours of Observation	2.5	2.0	2.0	2.0	2.0	2.0	2.0
Black-foot Albatross		1					
Red Phal.	2						
Gull sp.	3						1
Bird sp.	1	2	1	2			

Table 6: Diurnal Density of Species Groups in Eastern Grid, 12-22 Mar. 1967

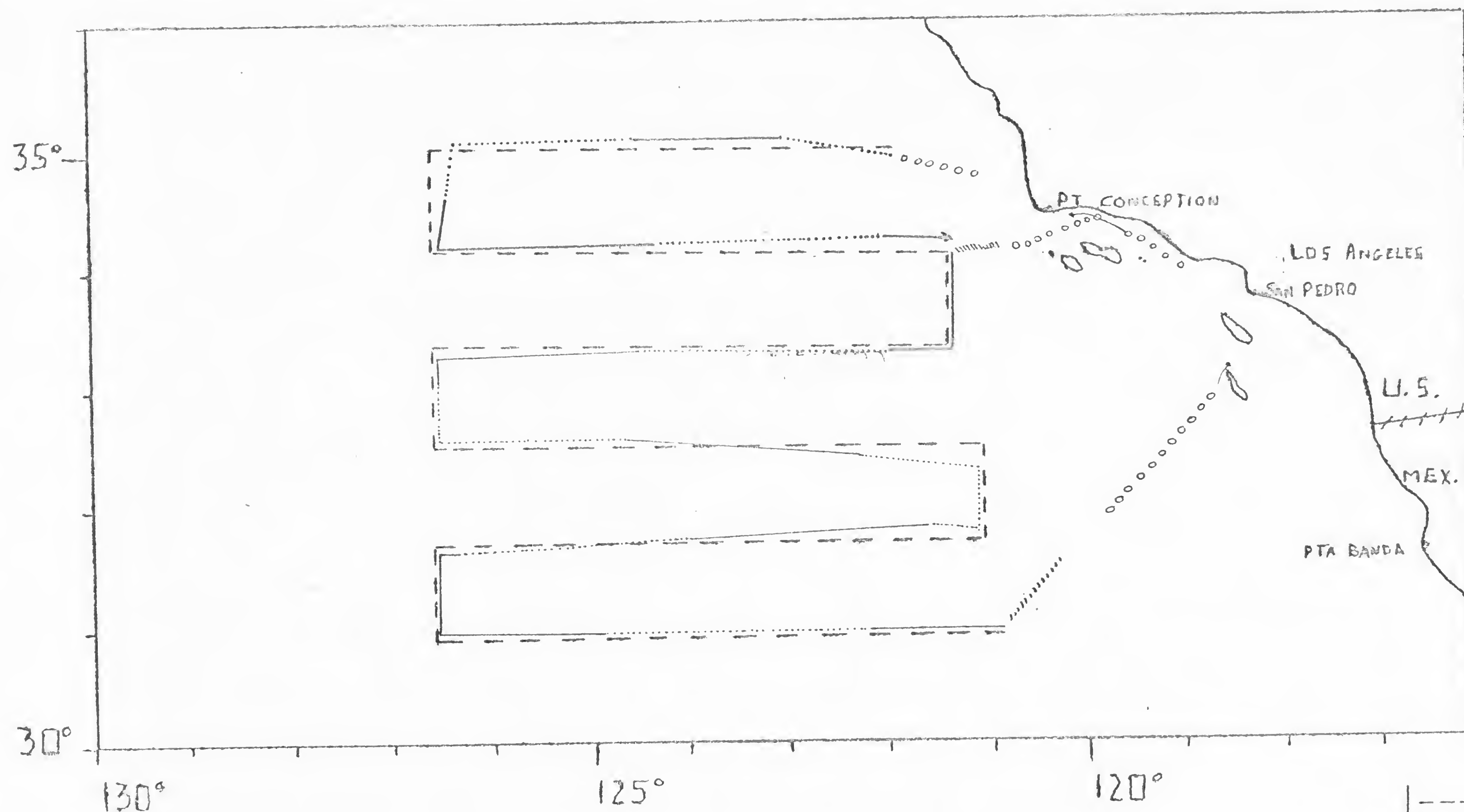
<u>Species group</u>	<u>No. Birds</u>	<u>Birds/lin. mile</u>	<u>Birds/sq. mile</u>	<u>Percent of total birds</u>
Albatross	49	.059	.015	7.0
Shearwater/petrel	21	.025	.013	3.0
Storm Petrels	162	.196	.196	23.2
Phalaropes	291	.352	.704	41.8
Jaegers	3	.003	.002	.4
Large Gulls	124	.150	.075	17.8
Kittiwakes	29	.035	.018	4.2
Alcids	14	.017	.034	2.0
Miscellaneous	4	.005	.003	.6
TOTALS	697	.841	1.055	100.0



Table 7: Summary of non-grid observations, EAC No. 5, March 1967

SPECIES	San Pedro to Point "A" and Port Hueneme to Point "D"			Point "O" To San Pedro		
	no. seen	% of total birds	birds per linear mile	no. seen	% of total birds	birds per linear mile
Black-foot Albatross	12	.8	.079	2	3.2	.030
Laysan Albatross	1	.06	.007			
Fulmar	14	.9	.092	5	7.9	.076
Pale-foot Shearwater	1	.06	.007			
White-rumped St. Pet.	1	.06	.007			
Sooty/Slender-bill				1	1.6	.015
Loon sp.	1	.06	.007			
Black Brant	11	.7	.072			
Brown Pelican	1	.06	.007			
Cormorant	3	.2	.020			
Pomarine Jaeger	1	.06	.007	4	6.3	.061
Jaeger sp.	4	.3	.026			
Gull sp.	930	60.0	6.115			
Herring Gull	34	2.2	.224	3	4.8	.045
Glaucous-winged Gull	3	.2	.020			
California Gull	156	10.0	1.027			
Western Gull	11	.7	.072	21	33.3	.318
Ring-billed Gull	1	.06	.007			
Black-legged Kittiwake	48	3.1	.316	1	1.6	.015
Sabine Gull				1	1.6	.015
Ancient Murrelet	1	.06	.007			
Rhinoceros Auklet	170	11.0	1.119	9	14.3	.136
Xanthus Murrelet	3	.2	.020			
Horned Puffin	8	.5	.053	2	3.2	.030
Alcid sp.	131	8.5	.863	1	1.6	.015
Red Phalarope				13	20.3	.197
Bird sp.	4	.3	.026			
Total	1550	100.1		63	100.0	

# EASTERN PACIFIC OCEAN

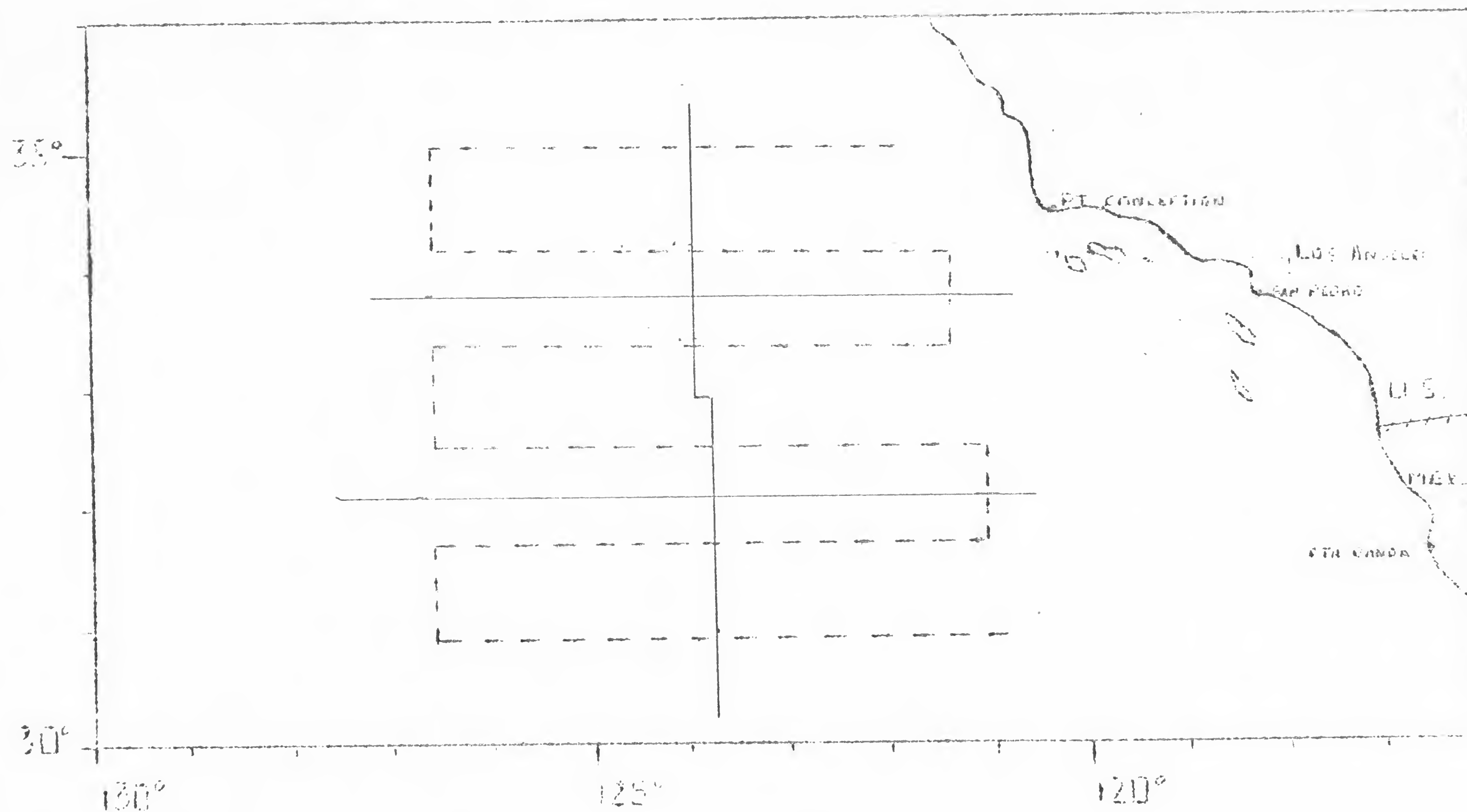


Map 1: Eastern Grid Nominal Cruise Plan and Grid and Non-grid Cruise Track on Eastern Area Cruise No. 5, March 1967.

- Nominal Grid Plan
- ..... Diurnal Grid Track
- Nocturnal Grid Track
- o o o o Diurnal Non-Grid Track
- ////// Nocturnal Non-grid Track



# EASTERN PACIFIC OCEAN



Map 2 - Grid pattern Showing East-West, and North to South Divisions Used in Tables 2 and 3

Date 11/MARCHShip SHARWATER (T-AG17)Cruise No. 177-67-4

Organization \_\_\_\_\_

Recorder \_\_\_\_\_

Sunrise: Time \_\_\_\_\_

Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Sunset: Time 1759Position: Lat. 33°-55'N, Long. 118°-52'W

Miles travelled from 0000 hours to sunrise = \_\_\_\_\_

Miles travelled from <sup>1515</sup>sunrise to sunset = 35

Miles travelled from sunset to 2400 hours = \_\_\_\_\_

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
-------------	-------------	----------	-----------

1.

2.

3.

4.

5.

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100						
0200						
0300						
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100						
1200						
1300						
1400						
1500	33° 45' N	118° 20' W				
1600	33° 40' N	118° 27' W	5.0	9	2.0	4
1700	33° 45' N	118° 30' W	5.0	9	2.0	4
1800	33° 55' N	118° 53' W	3.0	8	2.0	4
1900	33° 58' N	118° 57' W	3.0	9	2.0	5
2000	34° 00' N	119° 58' W	3.5	10	2.0	5
2100	34° 06' N	119° 18' W	2.5	4	CALM	
2200	34° 11' N	119° 30' W	2.5	4	CALM	
2300	34° 15' N	119° 40' W				
2400	34° 16' N	119° 52' W				

15 min  
fix by  
LAND



Date 12/MARCHShip SHEARWATER (TAG 177)Cruise No. 177-47-4

Organization \_\_\_\_\_

Recorder \_\_\_\_\_

Sunrise: Time 0621Position: Lat. 34°38'N, Long. 121°02'WSunset: Time 1815Position: Lat. 35°03'N, Long. 122°52'WMiles travelled from 0000 hours to sunrise = 63Miles travelled from sunrise to sunset = 97Miles travelled from sunset to 2400 hours = 56

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
-------------	-------------	----------	-----------

1.

2.

3.

4.

5.

miles sunrise to noon : 59  
" noon to sunset : 38  
97

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	34°15.5'N	120°04'W	225	5	345	2
0200	34 21.2N	120 14.2	240	7	345	3
0300	34 23.5N	120 26.6	250	9	350	3
0400	34 26.5N	120 38.5	250	9	350	3
0500	34 31'N	120 55'W	180	17	270	8
0600	34 36'N	120 59'W	150	17	270	8
0700	34 41'N	121 11'W	150	17	270	8
0800	34 46'N	121 20'W	150	15	225	7
0900	34 48'N	121 30'W	180	21	210	9
1000	34 50'N	121 38'W	180	21	210	9
1100	34 52'N	121 49'W	150	21	210	9
1200	34 58'N	122 00'	180	21	210	9
1300	34 53'N	122 04'	205	15	245	9
1400	34 58'N	122 11'W	205	15	245	9
1500	34 58'N	122 22'W	205	15	250	10
1600	34 58'N	122 34'W	220	15	250	12
1700	35 06'N	122 42'W	220	15	240	14
1800	35 02'N	122 50'W	220	15	225	15
1900	35 05'N	122 58'W	240	15	225	15
2000	35 07	123 07'W	220	10	225	14
2100	35 07	123 18'W	220	13	230	10
2200	35 06	123 30'W	230	13	230	10
2300	35 06	123 40'W	250	13	230	10
2400	35 06'N	123 52'W	250	13	230	10

0830-0930  
576 Gear

-P/ASH

Date 13 MARCHShip SHEARWATER (-177)Cruise No. 177-67-4Organization R.C.B.S.P.Recorder BridgeSunrise: Time 0635Position: Lat. 35°04'N, Long. 124°38'WSunset: Time 1828Position: Lat. 34°41'N, Long. 126°20'WMiles travelled from 0000 hours to sunrise = 42Miles travelled from sunrise to sunset = 97Miles travelled from sunset to 2400 hours = 58

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0600	STARS	35°04'N	124°38'W
2.	1820	STARS	34°40'N	126°20'W
3.				
4.				
5.				

## Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	35°05'N	124°03'W	240	13	230	10
0200	35°04'N	124°14'W	240	11	245	11
0300	35°04'N	124°25'W	240	11	240	11
0400	35°04'N	124°36'W	240	15	245	12
0500	35°04'N	124°37'W	240	15	245	12
0600	35°04'N	124°38'W	245	11	245	12
0700	35°02'N	124°47'W	245	11	250	12
0800	35°02'N	124°58'W	245	11	255	12
0900		250	260	15	260	14
1000		12	260	15	260	14
1100		25	260	17	260	14
1200	35°04'N	125°31'W	260	17	270	14
1300	34°03'N	125°41'W	260	17	270	13
1400	35°03'N	125°50'W	265	18	270	14
1500	35°02'N	125°59'W	300	21	270	14
1600	35°02'N	126°09'W	305	14	275	15
1700	34°56'N	126°18'W	305	20	280	15
1800	34°45'N	126°19'W	305	21	280	15
1900	34°34'N	126°21'W	300	21	280	15
2000	34°23'N	126°22'W	300	21	280	15
2100	34°14'	26 22'W	270	10	280	15
2200		26 11	270			
2300		25 50	270			
2400		46				

Gusts up  
to 40 kts



Date 14 March 1967 Ship SHARWATER (AG-177) Cruise No.           

Organization                                  Recorder                                 

✓ Sunrise: Time 0630 Position: Lat. 34° 08' N, Long. 124° 18' W

Sunset: Time 1811 Position: Lat. 34-16 N, Long. 122° 06' W

Miles travelled from 0000 hours to sunrise = 78

Miles travelled from sunrise to sunset = 112

Miles travelled from sunset to 2400 hours =           

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0630	STARS	34° 08' N	124° 24' W
2.	1830	STARS	34 16 N	122-02 W
3.				
4.				
5.				

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	34° 10' N	125° 34' W	245	10	270	9
0200	34° 10' N	125° 22' W	245	10	270	9
0300	34° 10' N	125° 10' W	245	10	270	8
0400	34° 10' N	124° 59' W	310	10	280	8
0500	34° 09' N	124 40 W	310	10	280	8
0600	34° 08' N	124° 24' W	310	10	280	8
0700	34° 08' N	124° 11' W	310	15	300	8
0800	34° 08' N	123° 59' W	310	15	315	8
0900	34-10 N	123-47	160	17	315	8
1000	34-11 N	123-32	160	17	315	8
1100	34-12 N	123-21 W	160	17	315	8
1200	34-12 N	123-08 W	160	17	315	8
1300	34 12 N	122-59 W	170	17	330	6
1400	34-13 N	122-47 W	170	16	330	7
1500	34-12	122-34	180	15	330	7
1600	34-14 N	122-20 W	180	14	320	7
1700	34-15 N	122-13 W	180	14	315	6
1800	34-16 N	122-06	180	14	315	6
1900	34-17 N	121-54 W	180	14	315	6
2000	34-18 N	121-43 W	180	14	315	6
2100	19	33				
2200		33				
2300						
2400						

Date 17 MARCH 67 Ship SHEARWATER (TA-177) Cruise No. \_\_\_\_\_

Organization POBSP Recorder \_\_\_\_\_

Sunrise: Time \_\_\_\_\_ Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Sunset: Time \_\_\_\_\_ Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Miles travelled from 0000 hours to sunrise = \_\_\_\_\_

Miles travelled from sunrise to sunset = 58

Miles travelled from sunset to 2400 hours = 61

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
-------------	-------------	----------	-----------

1.

2.

3.

4.

5.

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100						
0200						
0300						
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100	1142 DEPARTED PORT HAVENEME					
1200	34° 09' N	119° 14' W	—	CALM	—	—
1300	34° 09' N	119° 23' W	255	13	270	4
1400	34° 09' N	119° 35' W	260	14	270	4
1500	34° 10' N	119° 47' W	265	15	280	4
1600	34° 11' N	119° 59' W	280	17	280	7
1700	34° 11' N	120° 11' W	325	24	315	10
1800	34° 10' N	120° 22' W	325	24	315	9
1900	34° 10' N	120° 34' W	325	22	315	9
2000	34° 10' N	120° 46' W	325	22	315	9
2100	34° 10' N	120° 58' W	325	17	315	9
2200	34° 10' N	121° 11' W	325	17	315	9
2300	34° 05' N	121° 21' W	310	17	300	9
2400	33° 54' N	121° 21' W	310	17	300	9



Date 18 MARCHShip SHEARWATER (ZAC-177)

Cruise No. \_\_\_\_\_

Organization POBSP

Recorder \_\_\_\_\_

Sunrise: Time 0616Position: Lat. 33°20'N, Long. 121°57'W

Sunset: Time \_\_\_\_\_

Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Miles travelled from 0000 hours to sunrise = 56Miles travelled from sunrise to sunset = 121Miles travelled from sunset to 2400 hours = 63

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	1900	STAR	33°16'N	124°19'W
2.				
3.				
4.				
5.	1200 LAN			

Hourly Positions: See Table

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	33°44'N	121°20'W	310	15	305	7
0200	33°35'N	121°20'W	310	18	305	8
0300	33°23'N	121°20'W	310	20	310	10
0400	33°20'N	121°33'W	310	20	310	10
0500	33°20'N	121°44'W	350	18	310	10
0600	33°20'N	121°55'W	340	16	310	9
0700	33°20'N	122°06'W	345	16	310	9
0800	33°20'N	122°17'W	345	16	310	8
0900	33-22N	" 25W	355	14	310	8
1000	33-22N	" 32W	355	14	310	8
1100	33-22N	122-45W	355	14	320	8
1200	33-22N	122-57W	355	14	330	9
1300	33°15'N	123°15'W	355	12	340	6
1400	33°15'N	123°23'W	345	12	340	7
1500	33°15'N	123°35'W	345	12	340	7
1600	33°15'N	123°44'W	345	12	340	7
1700	33°17'N	123°55'W	350	12	340	7
1800	33°17'N	124°05'W	355	12	310	6
1900	33°17'N	124°19'W	355	12	310	6
2000	33-16'N	124-30W	355	12	310	6
2100	33°17'N	124°43'W	355	12	300	6
2200	33°17'N	124°57'W	345	12	300	6
2300	33°18'N	125°10'W	345	12	300	6
2400	33°18'N	125°23'W	345	12	300	6

Date 19 MARCH 67 Ship SHEPHERD (FAG-171) Cruise No. 177-67-4

Organization P.O.B.S.P. Recorder                     

Sunrise: Time 0630 Position: Lat. 32°59'N, Long. 126°26'W

Sunset: Time 1830 Position: Lat. 32°34'N, Long. 124°44'W

Miles travelled from 0000 hours to sunrise = 67

Miles travelled from sunrise to sunset = 110

Miles travelled from sunset to 2400 hours = 55

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
--	-------------	-------------	----------	-----------

1.	1900	STARS	32°34'N	124°38'W
----	------	-------	---------	----------

2.	Hourly Sun Lines & L.A.N. for 1200 posit.			
----	---	--	--	--

3.

4.

5.

# Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	33°18'N	125°36'W	345	12	300	6
0200	33°18'N	125°44'W	345	12	320	8
0300	33°18'N	126°02'W	315	12	320	8
0400	33°18'N	126°14'W	300	14	320	10
0500	32°18'N	126°25'W	300	10	310	8
0600	32°05'N	126°26'W	300	8	300	6
0700	32°54'N	126°27'W	300	8	290	4
0800	32°43'N	126°26'W	320	14	290	6
0900	32°33'N	126°22'W	AIRS	4	270	3
1000	32°34'N	126°12'W	AIRS	3	CALM	—
1100	32°35'N	126°03'W	AIRS	—	CALM	—
1200	32°35'N	125°56'W	AIRS	—	CALM	—
1300	32°35'N	125°46'W	AIRS	—	CALM	—
1400	32°35'N	125°34'W	AIRS	—	CALM	—
1500	32°35'N	125°21'W	285	8	330	3
1600	32°31'N	125°11'W	285	8	330	4
1700	32°34'N	125°02'W	275	10	330	5
1800	32°34'N	124°48'W	275	10	330	5
1900	32°34'N	124°38'W	275	10	330	5
2000	32°34'N	124°25'W	275	10	330	5
2100	32°33'N	124°14'W	270	10	270	1
2200	32°32'N	124°02'W	270	10	270	1
2300	32°32'N	123°50'W	270	10	270	1
2400	32°31'N	123°36'W	270	10	270	2

Reach PT 6000

CUT TO 090

SKIFF in

water today



Date 20 MARCHShip SHEARWATER (FAG-171)Cruise No. 177-47-4

Organization \_\_\_\_\_

Recorder \_\_\_\_\_

Sunrise: Time 0614Position: Lat. 32°28'N, Long. 120°28'WSunset: Time 1817Position: Lat. 31°40'N, Long. 121°28'WMiles travelled from 0000 hours to sunrise = 64Miles travelled from sunrise to sunset = 130Miles travelled from sunset to 2400 hours = 63

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0000	STAR	32°28'N	120°28'W
2.	1830	STAR	31°40'N	121°31'W
3.				
4.				
5.				

## Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	32°31'N	123°25'W	300	10	310	1
0200	32°30'N	123°13'W	300	10	310	1
0300	32°30'N	123°01'W	300	9	310	2
0400	32°30'N	122°49'W	300	10	310	3
0500	32°30'N	122°37'W	300	10	300	3
0600	32°24'N	122°35'W	300	10	300	3
0700	32°24'N	122°12'W	300	10	315	3
0800	32°24'N	121°58'W	305	8	315	3
0900	32°22'N	121°44'W	330	13	330	5
1000	32°22'N	121°33'W	330	13	330	6
1100	32°22'N	121°19'W	330	13	330	6
1200	32°22'N	121°07'W	330	13	300	6
1300	32°07'N	121°00'W	320	14	330	5
1400	31°57'N	121°00'W	320	14	320	5
1500	31°51'N	121°00'W	320	15	320	6
1600	31°42'N	121°05'W	320	14	320	7
1700	31°43'N	121°16'W	330	15	320	6
1800	31°40'N	121°37'W	335	15	330	6
1900	31°42'N	121°39'W	335	15	330	6
2000	31°45'N	121°49'W	335	15	330	6
2100	31°43'N	122°02'W	330	11	330	4
2200	31°42'N	122°15'W	330	11	340	4
2300	31°41'N	122°27'W	345	14	340	4
2400	31°40'N	122°40'W	345	16	340	4

PT Johnston

1300-1700 - Maneuvering To Fix STG-Bear.

Date 21 MARCH 67 Ship SHEARWATER (TAG-17) Cruise No. 177-67-04

Organization \_\_\_\_\_ Recorder \_\_\_\_\_

Sunrise: Time 0620 Position: Lat. 31°39'N, Long. 123°57'W

Sunset: Time 1833 Position: Lat. 31°40'N, Long. 126°00'W

Miles travelled from 0000 hours to sunrise = 66

Miles travelled from sunrise to sunset = 99

← note see chart.  
lots of maneuvering - ENY

Miles travelled from sunset to 2400 hours = 65-

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
--	-------------	-------------	----------	-----------

1. 1200 By L.A.N. Hourly sun lines from 0900-1500hrs.

2. all other D.R. Positions ERR

3.

4.

5.

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	31°46'N	122°51'W	305	11	301	2
0200	31°39'N	123°04'W	320	12	315	5
0300	31°34'N	123°16'W	320	14	320	9
0400	31°39'N	123°28'W	320	14	310	9
0500	31-39N	123 40 W	320	14	310	9
0600	31-39N	123 57 W	320	14	310	9
0700	31-38N	124-05W	310	11	310	8
0800	31-38N	124-18W	310	11	310	8
0900	31 39 N	124 26 W	310	11	290	5
1000	31 40 N	124 36 W	30	06	290	5
1100	31 41 N	124 47 W	HAIRS	—	CALM	—
1200	31 44 N	125 00 W	HAIRS	—	CALM	—
1300	31 44 N	125 09 W	HAIRS	—	250	11
1400	31 43 N	125 19 W	HAIRS	—	250	4
1500	31 45 N	125 29 W	315	10	270	3
1600	31 44 N	125 37 W	315	10	270	3
1700	31 42 N	125 47 W	300	5	270	3
1800	31 41 N	125 59 W	270	5	270	3
1900	31 40 N	126-12'W	285	9	270	3
2000	31 33 N	126 23 W	285	9	270	3
2100	31-22N	126 24 W	CALM	—	CALM	—
2200	31-16N	126 24 W	CALM	—	CALM	—
2300	30-58N	126 25 W	CALM	—	CALM	—
2400	30-56N	126 20 W	CALM	—	CALM	—

1930 Reached  
PT. Larch  
C/C To 180°  
2330 Reached  
PT MAPLE  
C/C To 090°



Date 22 MARCHShip SHEARWATER (FAG-17)Cruise No. 177-67-4

Organization \_\_\_\_\_

Recorder \_\_\_\_\_

Sunrise: Time 0624Position: Lat. 30°49'N, Long. 125°03'W

Sunset: Time \_\_\_\_\_

Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Miles travelled from 0000 hours to sunrise = 65

Miles travelled from sunrise to sunset = \_\_\_\_\_

Miles travelled from sunset to 2400 hours = \_\_\_\_\_

TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
-------------	-------------	----------	-----------

1. sun times when possible and LAM

2.

3.

4.

5.

## Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	30°50'N	126°06'W	345	3	Calmer	
0200	30°50'N	125°53'W	345	3	Calmer	
0300	30°50'N	125°42'W	340	2	Calmer	
0400	30°50'N	125°28'W	<del>340</del> 285	2	315	2
0500	30°50'N	124°43'W	300	7	315	2
0600	30°49'N	124°31'W	300	7	315	2
0700	30°49'N	124°18'W	300	7	320	2
0800	30°49'N	124°07'W	300	7	320	2
0900	30°50'	123°55'W	315	8	315	2
1000	30°50'	123°42'W	315	8	315	2
1100	30°51'	123°30'W	315	8	315	2
1200	30°52'	123°19'W	315	10	315	2
1300	30°52'	123°09'W	315	11	310	2
1400	30°51'	122°58'	315	11	305	2
1500	30°51'	122°48'	315	11	310	3
1600	30°52'	122°37'	310	12	315	4
1700	30°52'	122°26'	310	12	320	4
1800	30°53'	122°14'	310	12	320	4
1900	30°53'	122°02'	310	12	320	4
2000	30°54'	121°48'	305	12	320	4
2100	30°54'	121°34'	305	12	320	4
2200	30°54'	121°20'	305	12	320	4
2300	30°54'	121°08'	305	12	315	4
2330	30°54'	121°00'	305	12	315	4
2400	30°57'	120°56'	305	14	315	4

Excluded from subject of R.R.

Reprinted  
Original

Date 23 MARCH 1967 Ship SHEARWATER (TAG-177) Cruise No. 177-27-4

Organization \_\_\_\_\_ Recorder \_\_\_\_\_

Sunrise: Time 0601 Position: Lat. 31°41'N, Long. 120°05'W

Sunset: Time 1809 Position: Lat. 32°45'N, Long. 118°50'W

Miles travelled from 0000 hours to sunrise = 63

Miles travelled from sunrise to sunset = 66

Miles travelled from sunset to 2400 hours = 57

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
--	-------------	-------------	----------	-----------

1.

2.

3.

4.

5.

# Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	31°05'N	120°45'W	305	14	315	2
0200	31°13'N	120°41'W	305	14	315	4
0300	31°20'N	120°33'W	305	14	315	5
0400	31°28'N	120°26'W	330	14	310	7
0500	31°33'N	120°17'W	325	14	220	4
0600	31°41'N	120°09'W	300	16	320	4
0700	31°48'N	120°01'W	300	16	300	5
0800	31°55'N	119°53'W	315	18	355	6
0900	32°00'N	119°46'W	315	18	330	8
1000	32°06'N	119°38'W	315	15	320	8
1100	32°12'N	119°30'W	315	15	320	8
1200	32°23'N	119°25'W	315	12	320	8
1300	32°26'N	119°11'W	315	12	315	7
1400	32°30'N	119°05'W	315	13	315	7
1500	32°34'N	119°01'W	315	13	310	7
1600	32°37'N	119°03'W	315	13	310	7
1700	32°41'N	118°57'W	300	20	300	5
1800	32°48'N	118°51'W	300	20	290	5
1900	32°58'N	118°47'W	300	16	290	5
2000	32°58'N	118°43'W	300	16	290	4
2100	33°05'N	118°35'W	300	16	290	6
2200	33°11'N	118°27'W	300	16	290	6
2300	33°18'N	118°18'W	300	16	290	4
2400	33°24'N	118°14'W		Calmer	300	4



12

S  
~~1775~~  
~~1815~~  
1646  
1.29

T  
1645  
1200  
4.45

1.3 hr

4.8 hr

13

S  
0635  
0725  
1.10

1.2 hr

12

~~1828~~  
1756  
17.58

11.0 hr

14

S  
~~1751~~  
~~1815~~  
7.51

7.9

1771

1814

1422

3.49

3.8

18

S  
~~1047~~  
~~0610~~  
431

4.5

~~1825~~

1048

37

7.6

19

11

1830  
0630

20

~~1216~~  
~~1208~~  
0615

6.53

6.9

2

1817  
1309

5.07

5.1

21

~~1825~~  
~~1815~~  
0630

9.45

4.8

1816

1116

7.14

7.2

22

Y  
1553

3124

9.29

9.5

1785

~~1825~~

1554

2.31

2.8

SS #4 EM #5

Time and Post. Settings Cards

X 11<sup>TH</sup> - 1515-1759 - NON GRID

X 12<sup>TH</sup> - 0620-1159 - NON GRID

✓ 1200-1645 - T

✓ 1646-1815 - S

✓ 2000-2230 - S

✓ 13<sup>TH</sup> - 0635-0725 - S

X 0726-1828 - R

X 2000-2200 - R

X 14<sup>TH</sup> - 0630-1421 - S

X 1422-1811 - T

X 2000-2100 - T

X 17<sup>TH</sup> 1300-1811 - NON-GRID

X 18<sup>TH</sup> 0646-1047 - T

X 1048-1047 - T

✓ 18<sup>TH</sup> 0616-1047 - W

✓ 1048-1825 - V

✓ 2020-2128 - V

✓ 2130-2220 V

✓ 19<sup>TH</sup> 0630-1830 U

✓ 2030-2230 V

20<sup>TH</sup> 0615-1308 W

1309-1817 - Z

2030-2230 Z

21<sup>TH</sup> 0630-1115 - Y

1116-1830 - X

2030-2230 - X

22<sup>TH</sup> 0624-1553 - Y

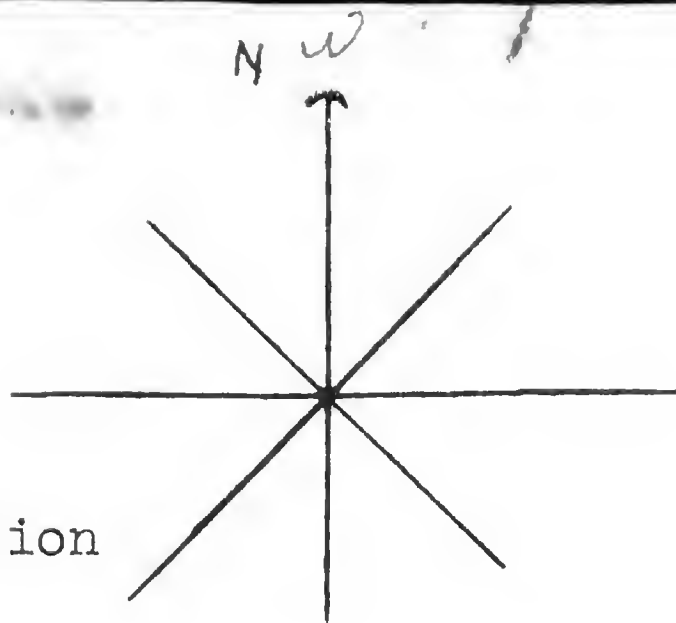
~~2000-2200 -~~

1554-1825 - Z

2000 2200 - Z

23 0620-1810 - NON-GRID





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 11 March 1967  
Pg. # 1

SPECIMEN  
or

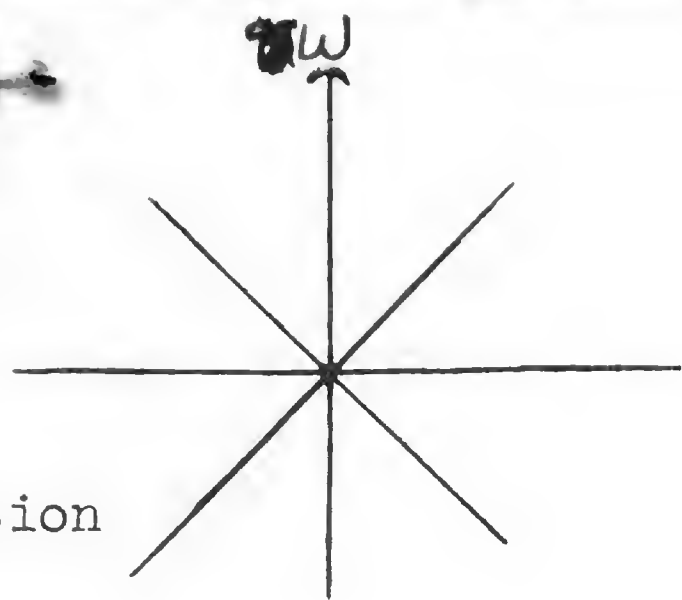
TIME SPECIES # DIR. BAND NO. REMARKS

1515					open observation observations off Pt. Fermin
1515	Gulls				about 500 in sight. 98% California most sitting on H <sub>2</sub> O.
1538					Bills yellower, red spots redder than on previous surveys.
1540					gray whale 2 headed NW. - 33-43. 118-24
1541					H Gull: 1 imm
1550					R-B .. : 1 ..
1555					gray whale 3 head. N 33-43 118-24
1556					Cal. Sea Lion 2 (ca. 25 gulls around them)
1558					gray whale 2 33-43 118-25
1558					" " 4 33-44 118-26
1558	GWG				Now 12 Calif. Gulls.
1610	Cal. Gull	30			imm
1615	Gulls				sitting on H <sub>2</sub> O
1617	W Gull	4			~200 following a tug following - ad.
1650	Rhinos	2			on H <sub>2</sub> O - imm.
1650	Gulls				following ~ 80 - all Calif, except 2 imm west.
1705	Gulls	60	ca		~80% ads.
1720	Gulls	125			sitting on H <sub>2</sub> O
1726	H Gull	1	SW		following a ship going to Long Beach
1731	Black Brent	11	NW		Ad
1742					Pomarine 2 - 33-53 - 118 48
1759	Gulls				60 following ship
1759					Sunset close observation

OBSERVERS:

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

Ship  
Direction



SPECIMEN  
or

Date 12 March 1967  
Pg.# 1

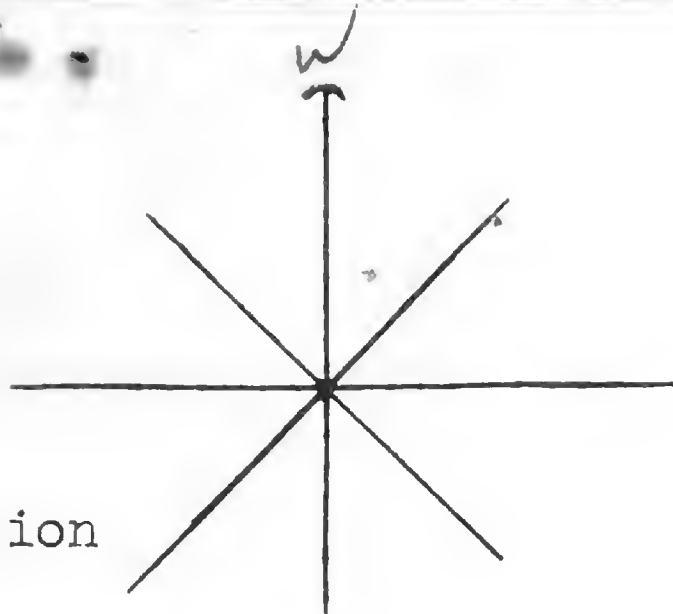
TIME SPECIES # DIR. BAND NO. REMARKS

0620					Begin obs
0620	HG				following 6
0621	BFA	1			follow
0622	Fulmar	1	NW		dk.
0622	BLK	1	W		imm.
0625	HG				now 20
0628	Loon (common)	1	N		
0630	Cal. Gull	2			on H <sub>2</sub> O - 1 ad, 1 imm.
0634	HG	10+			
	BFA	3			following another ship going E
0640	Fulmar	1	W		dk.
0645	Jaeger	1	N		
0646	BLK	6	N		imm.
0648	BFA				now 3
0650	Fulmar	1	W		dk.
0658	BLK	3	N		2 imm. 1 ad
0659	Fulmar	1	W		dk.
0700	BLK	1	N		imm.
0705	U	3	N		imm
0707	HG				now 22; 4 imm, 18 ad.
0709	BFA				now 5
0712	BLK	2	on H <sub>2</sub> O		imm.
0715	Fulmar	1	W		dk.
0716	Jaeger	1	W		-briefly harassed HG
0720	BLW G	1			follow - imm
0721	BLK	1	N		imm
0722	BFA				now 6
0730	Jaeger	1	W		
0735	Fulmar	1	W		dk.
0750	Alcid	1			small
0755	BLK	1	W		imm
0800	C. Sealion		W		

121-24  
34-46



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

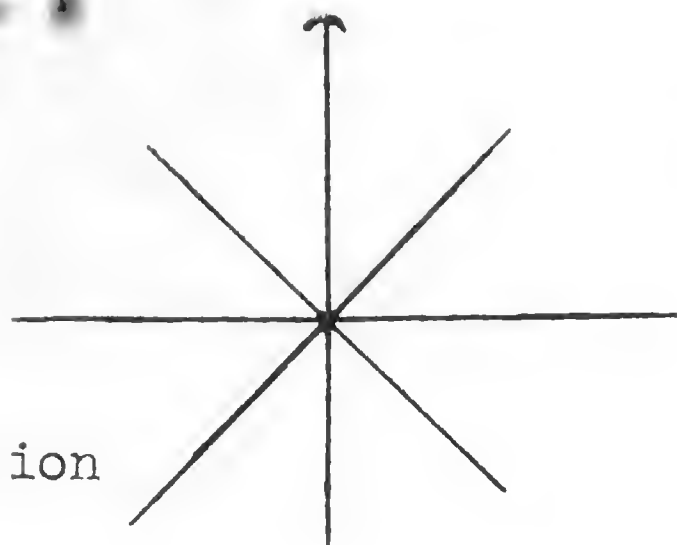
Date 12 Mar '67  
Pg.# 2

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0800	Fulmar	2	☉		1 light, 1 dark
0805	BFA	8			following
	HG.	10			all ad., bills very yellow
	GWG	1			imm
0807	Alcid	1	S		large, white below
0810	BLK	1	☉		imm
0820	"	1			imm on H <sub>2</sub> O
0820	HG	15			12 ad, 3 imm.
0825	Fulmar	1	☉		intermediate
0826					imm Herring Gull just caught a small
0831	BLK	1	☉		fish.
0833	"	1	SW		imm
0837	"	1			ad.
0837	Alcid	1	☉		imm
0837	Fulmar	1	NW		large
0841	Calif. Gull	1	☉		dark
0843	BLK	1			ad following
0843	GWG	1	☉		imm
0854	Rino. Auklet	2	W		now 2 imm
0900	BLK	1	N		on H <sub>2</sub> O
0900	Pom J.	1	SE		imm
0910	Fulmar	1	☉		Ad Intermediate phase
0916			☉		Dark
0930	BLK	2	☉		Seal
0935	Jaeger	1			Approached ship
0945	Laysan				
	Albatross	1			

34-49 121-32

Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 12 March 67  
Pg. # 3

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

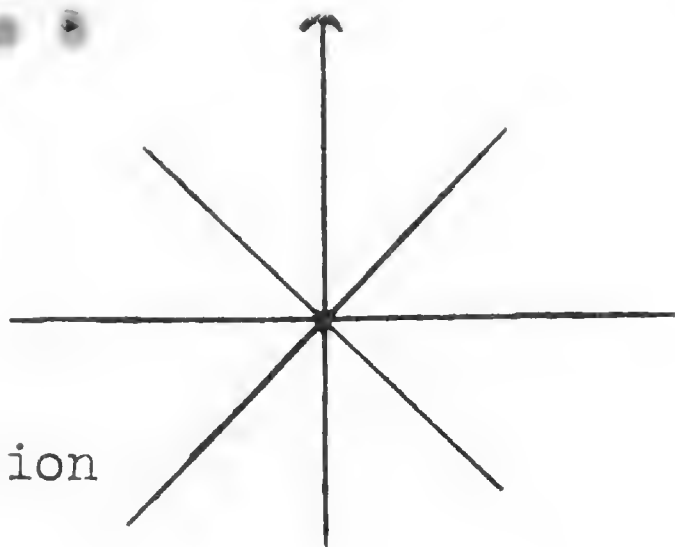
0945	BLK	2	a	Imm
0955				Bird squall
1012	Fulmar	1	on H <sub>2</sub> O	inter.
1030				end squalls
1117	Fulmar	1	W	dark
1123	Pale-foot shear (P. carneipes)	1	NE	
1125	HG	17		12 ad, 7 imm
	GWG	1		imm
	BFA	4		
1143	BLK	1		ad on H <sub>2</sub> O
1150	Fulmar	1	00	dark
1155	HG	21		8 Imm
	BFA	4		

1200 enter Grid

1215	HG	17		7 Imm
	GWG	2		Imm
	BFA	4		are with 6 on 7 <sup>th</sup> B. Finding Missing
1221				Seal 34-58 122-01
1247	BFA	6	a	Fulmar
1252	Fulmar	1	NW	Dark
1300	"	1	NE	"
1305	BLK	1	2	ad.
1310	Fulmar	1	00	dark
1315	HG			4 ads, 17 imm, 12 GWG imm
1317	Alcid.	1	on H <sub>2</sub> O	
1328				For Seal 34-58 122-08
1334				" "
1340	BLK	1	2	ad
1350	"	1	00	imm
1400				Squall
1403	WRSP	1	00	



OBSERVERS:

Ship  
Direction
 SMITHSONIAN INSTITUTION  
 DIVISION OF BIRDS  
 AT SEA DAILY LOG - E
SPECIMEN  
orDate 12 March  
Pg.# 4

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1454	A/cid	1	NW		
1504	BLK	1	W		Imm
1512	A/cid	1	N		
1514	Rhino	1	W		imm
1525	BLK	1	W		Imm Following
1527	"	1	W		Now 2 Following
1542	Fulmar	1	W		Dark
1605	Shear/Pet	1	W		
1606	BLK	2	W		Imm
1610					Following — end squall briefly
1615	Pom Jaeger	1	W		light phase 5 BFA
1630	"	1	W		25 <sup>th</sup> HG
1635	BLK	1	W		ad BLB — dk <del>spotted</del> squall again
1656	Fulmar	1	W		ad intermediate
1657	BLK	1			ad sitting on H <sub>2</sub> O
1700	"	3			1 ad, 2 imm following ship.
1710	WRSP	1			over a small oil slick.
1737					BFA 10
1738	BLK	2			HG 6 ad, 4 imm
1758	BLK	3			1 ad, 1 imm
1800					1 " 2 imm.
1800	HG	16			12 ad, 4 imm
	GWG	1			imm
1816	HG	29			5 imm
	GWG	1			Imm
	BFA	10			
1816					Sunset



## SPECIMEN

or

Nocturnal

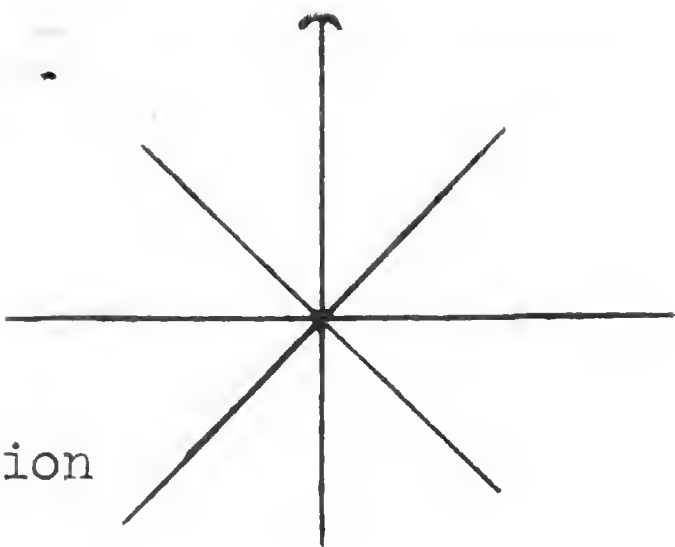
OBSERVERS:

Date <sup>12-</sup> 13 March '67  
Pg. # 1

SI-MNH-958-e  
Rev. 5-66



OBSERVERS:

Ship  
Direction
 SMITHSONIAN INSTITUTION  
 DIVISION OF BIRDS  
 AT SEA DAILY LOG - E
SPECIMEN  
orDate 13 March 67  
Pg. # 1

TIME SPECIES # DIR. BAND NO. REMARKS

0635					Seems begin observation.
0635	BFA	1			Following
0658	Long-tailed Tanager	1	E		Ad
0710	H.G.	4			Ad following
0715	BLK	1	NW		Ad
0725	BFA	6	e		Following
0748	<del>BLK</del>				Seal — 35-03 124-52
0754	H.G.	8			1 Imm
0810	St. pet	1	8		
0820	"	1	8		
0945	H.G.	7			6 ad, 1 imm — some adults lacking the winter brown feathers on back of neck.
	BFA	2			
1130	BLK	1	8		ad
1140					Squalls, <del>disturbance</del>
1222	BLK	2			ads. sitting on water
1314	F.T. Petrel	1	NW		
1350	Alcid	1	W		
1408	BLK	1	8		ad
1412	"	1	8		ad.
1422					F. seal — 35-03 125-53
1450	H.G.				14 ads.
	BFA				4
1510	Small Pterodroma	2	N		not very close, seemed to have pretty light underwings.
1514	BLK	1	8		imm following.
1525	Pterodroma	1	S		medium size, all dark. Not a sooty/slender.
1526	sp. Fork-T. Pet	1	N		
1540	BLK	2	NE		adults
1650	BFA	11			Following



OBSERVERS:

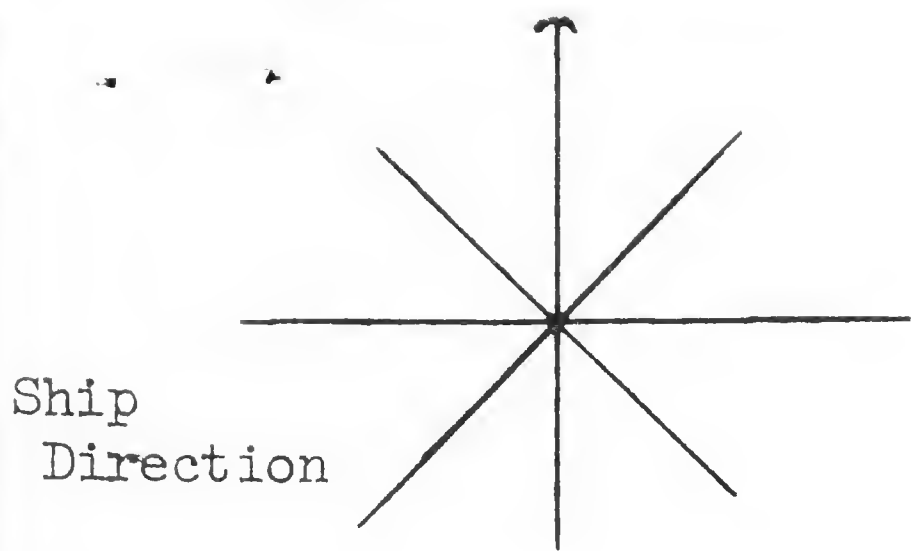
Date 13 March 1967  
Pg. # 2

SPECIMEN  
or

SI-MNH-958-e  
Rev. 5-66



60 Feb 9  
60 Feb 9



Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 13 March  
Pg. # \_\_\_\_\_

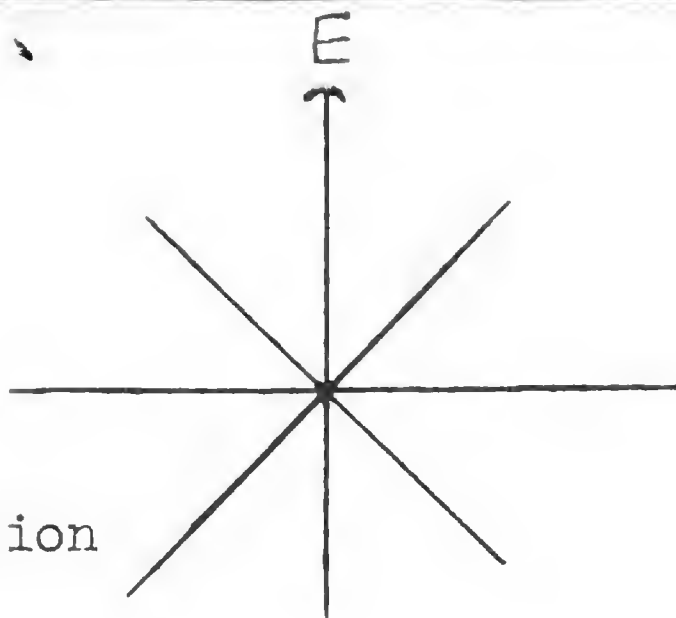
SPECIMEN  
or

*Returned*

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2000					<i>begin dr</i>
2035	<i>Gull</i>	<i>1</i>	<i>Q</i>		
2136	<i>Bird</i>	<i>1</i>			
2142	<i>R. Phal.</i>	<i>2</i>	<i>-</i>	<i>on H<sub>2</sub>O</i>	<i>- flew</i>
2143	<i>Gull</i>	<i>1</i>	<i>Q</i>	<i>}</i>	<i>- seen by capt'n</i>
2145	<i>Gulls</i>	<i>3</i>			
2152	<i>Gull</i>	<i>1</i>			
<i>2200</i>					<i>close</i>



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

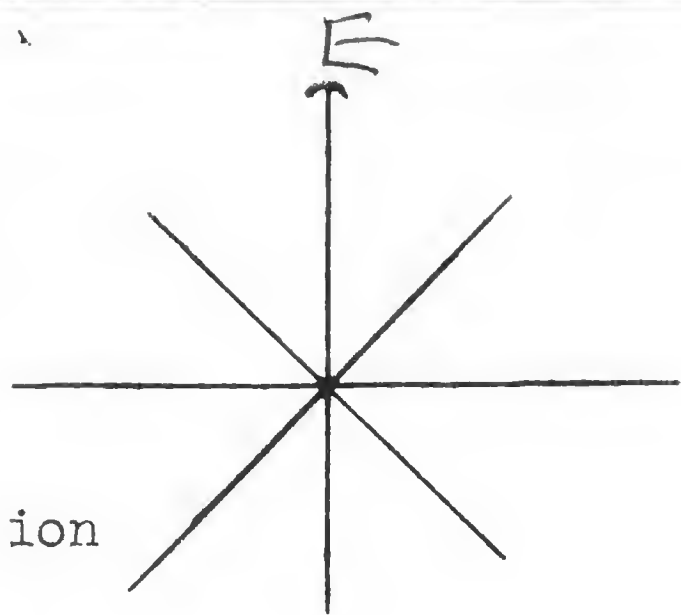
OBSERVERS:

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Date 14 March 1967  
Pg.# 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0630					begin obs.
0635	HG	2			ad. following
0655	Horn. Puffin	1			on H <sub>2</sub> O, well seen.
0700	Alcids	2	N		Large
0702	WRSP	1	⊙		
0710	HG				Now 3 ad.
0711	WRSP	1	⊙		
0717	HG	6			all ad.
0722	HG	8			" "
0726	WRSP	1	⊙		
0735					Fur seal 1 - 34-08 124-04
0735	HG	10			all ad.
0745	WRSP	1	⊙		
0746	"	1	⊙		
0754	Alcids (Rhino)	3			on H <sub>2</sub> O
0800	WRSP	1	⊙		
0801	GLWG	1			follow - imm
0810	WRSP	1	⊙		
0811	"	1	⊙		shot, picked up by a HG - god damn!
0819	"	1	⊙		
0820	BFA	1	⊙		one with a band.
0825	HG	2			follow 14 12 ad 2 imm
0837	WRSP	1	⊙		
0900	"	1	⊙		
1010	HG				13 ad, 3 imm - total 16
1102	Alcid	1	N		
1110	HG (ad)	1			collected DLD
1128	WRSP	1	⊙		
1130	Puffin?	1	W		
1132	WRSP	1	⊙		
1145	"	1	⊙		
1255	"	5	⊙		
1340	BFA				now 3
1425	Alcid	1	⊙		
1443	WRSP	3	⊙		
1500	BFA				now 4
1503	WRSP	1	⊙		
1510	HG				20: 18 ad 5 imm



Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 14 March 67  
Pg. # 2

SPECIMEN  
or

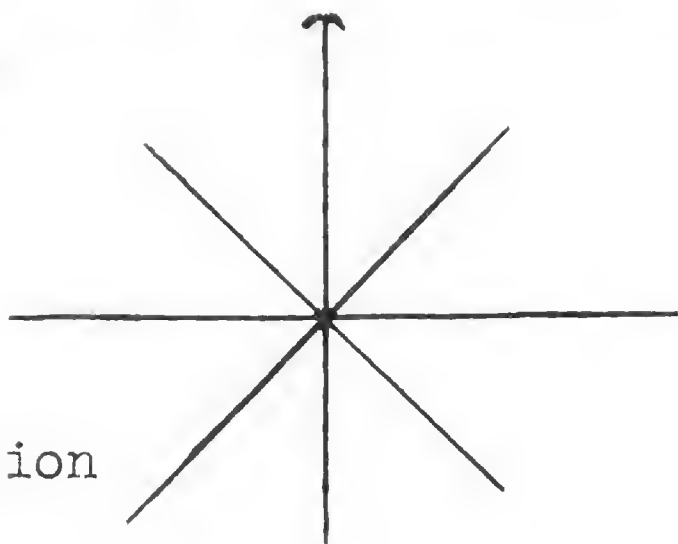
TIME SPECIES # DIR. BAND NO. REMARKS

1525	WRSP	1	☉		
1537	"	1	☉		
1546	BFA				now 6
1555	Sooty Shear.	1	☉		
1600	Fulmar	1	☉		
1625					Dark
1704					Sail 1 - 34-14 122-17
					Now 8 BFA
1719	BLK	1			HG 19 - 15 ad, 4 imm
1722					ad.
1726	Fulmar	1	☉		Now 12 BFA
1731	GWG	1			dark
1735					imm
					Garbage dumping: 45±5 adults HG
1742	Fulmar	1	☉		6 imm "
					11 BFA
1745	Jaeger sp	1	SW		1 GWG imm
1800	Fulmar	1	☉		dark





OBSERVERS:

Ship  
Direction
 SMITHSONIAN INSTITUTION  
 DIVISION OF BIRDS  
 AT SEA DAILY LOG - E
SPECIMEN  
or

NON-GRID

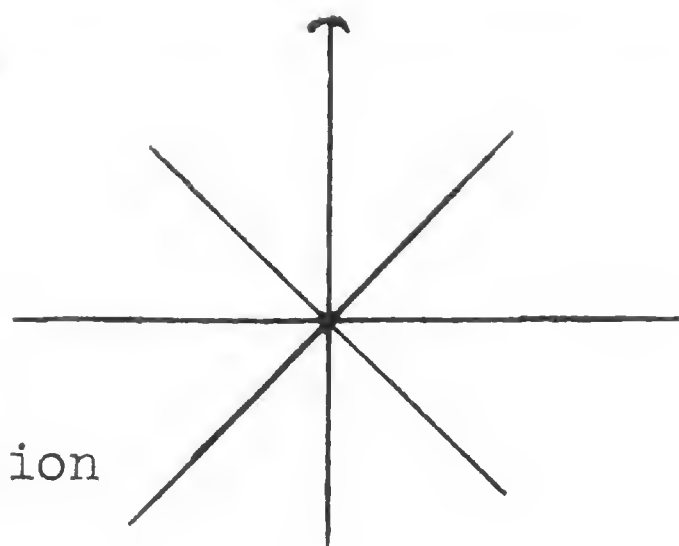
Date 17 March 1967  
Pg.# 1

TIME SPECIES # DIR. BAND NO. REMARKS

1300					Begin obs.
1301	W. Gull	2	S	1 ad, 1 sub-ad	
1310	"	1	S	- ad - molt	9th prim. - middle secs.
1320	"	1	S	- ad	
1323	"	1	S	- ad	
1325	Gulls	30+	S	- ad.	following another ship
1331	Cal. G.	1	W		imm -
1333	B. Pelican	1	W		
1335	W. Gull	1	N	- ad	
1345	Alcids	3		on H <sub>2</sub> O	
1410					whale 1 - 34-09-119-37
1430	BLK	2	W		Imm
1437	Alcids	2	NW		
1448	BFA	1			
	Gulls	7			Follow another ship.
1457	Gulls	4	SW		Feeding.
1501	W. Gulls	3			ads. following.
1520	Gull sp.	4			distant
1543	BLK	1	SW		U
1558	Cal. Gull	1	NW		
1609	BFA	1			following
1630	BLK	5	W		imm.
1631	Birds	4	N		
1632	Alcid	1	N		
1632	"	3	N		
1634	"	5	W		probably Rhinos
1635	"	1	N		
1637	Rhinos	25+	SW		on H <sub>2</sub> O
1638	"	6	N		
1640	"	2	NW		
1641	"	1	NW		
1644	"	5	W		
1645	"	1	NW		
1646	BLK	1	W		imm.
1646	Rhino	1			on H <sub>2</sub> O
1647	"	1	W		



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

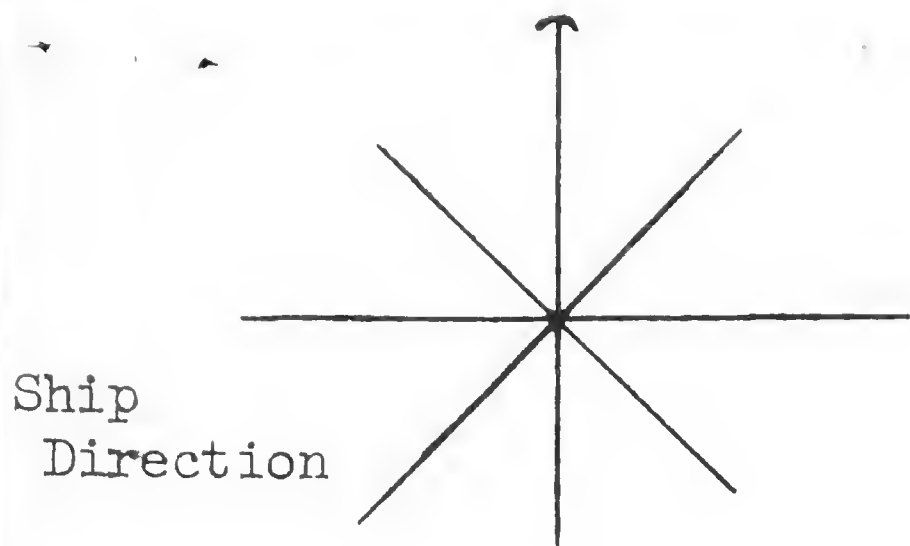
SPECIMEN  
or

NON-GRID

OBSERVERS:

Date 17 Mar  
Pg. # 2

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1650	Rhino	3	NW		
51	"	4	W		
56	"	6	☉		on H <sub>2</sub> O
57	BLK	1	W		Imm
59	Coromant	2	E		
59	Rhino	48	W		
1700	Rhino	4	W		
1700	BLK	1	☉		Imm
1703	Rhino	2	☉		on H <sub>2</sub> O
04	"	1	☉		"
05	"	4	☉		"
07	"	2	☉		"
09	"	1	☉		"
12	"	5	☉		"
14	"	2	☉		"
14	"	1	☉		"
17	"	8	☉		"
17	BLK	1	☉		"
20	"	3	☉		"
20	Rhino	8	☉		Imm
24	Alcid	1	☉		on H <sub>2</sub> O
28	Alcid	2	☉		on H <sub>2</sub> O
33	Coromant	1	☉		
34	Xantus	2	☉		on H <sub>2</sub> O
35	"	1	☉		on H <sub>2</sub> O
35	Rhino	2	☉		"
37	"	2	☉		
39	"	1	☉		
41					Porpus? 1 - 34-10 120-18
44	BLK	1	☉		"
47	Alcid	2	SE		
49	Rhino	1	☉		on H <sub>2</sub> O
51	"	4	☉		"
54	"	8	☉		"
55	Alcid	100 ± 25			on horizon
56	WRSP	1	W		
56	Rhino	2	☉		on H <sub>2</sub> O



Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

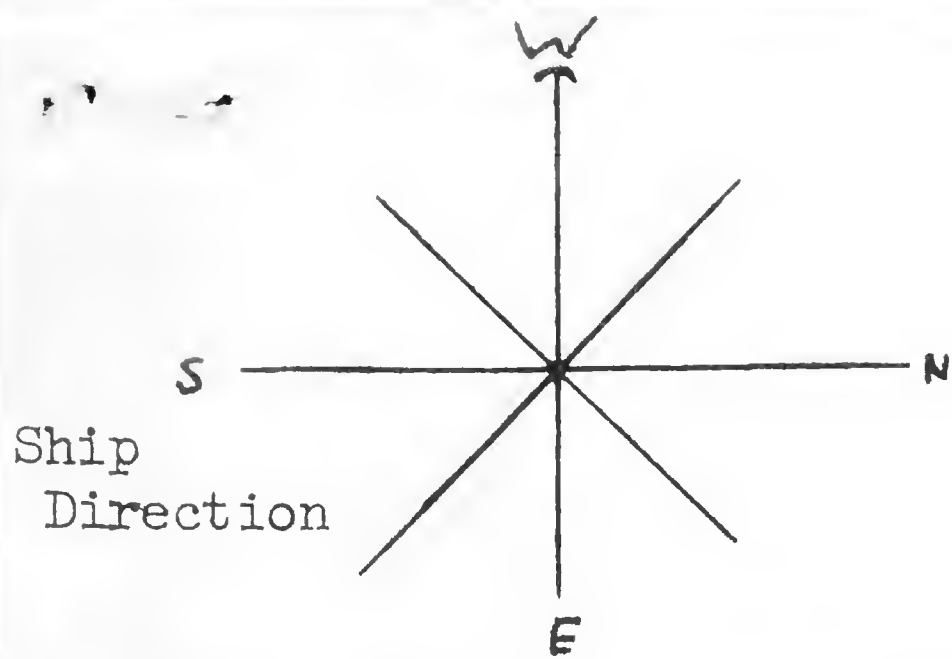
SPECIMEN *NON-GRID*  
or

OBSERVERS:

Date *17 March '67*  
Pg.# *3*

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1758	12A	1	NW		
59	"	1			<i>on H<sub>2</sub>O, Breed Plum.</i>
59	Horn P.	1			
	Alcid	2			
1802	Alcid	4			<i>" " } together</i>
	HP	1			
1804	HP	6			
1806	Alcid	1			
1810	"	4	S		
1810	RA	3			<i>on H<sub>2</sub>O</i>
1811					<i>" "</i>
					<i>Sunset</i>





SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E


OBSERVERS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date 18 MARCH 1967  
Pg. # 1

SPECIMEN DIURNAL GRID  
or

TIME SPECIES # DIR. BAND NO. REMARKS

					SUNRISE
0630	BFA	5	Follow.		
0635	HG	1	ad.		
0715	St. pet.	1	⊙		
0720	HG	6	now	ads.	
0730	HG			now 8, 7 ad, 1 imm	
0750	GWG	1		imm	
0815	Laysan A.	1	⊙		
0915	HG	1	Follow	coll: Lewis Ad	
0955					
1012	WRSP	1			underway after Bird Pick up
1130					Leach's - black line seen
					No Gulls, 1 BFA Following.
1155	WRSP	2	⊙		water covered with small mackerel type
1237	HG	1	⊙		Sillyfish
1242	R. Phalarope	2	⊙		Ad Following
1420			NW		
1435					BFA 2, HG ad 2.
1450					Sperm Whale? 8 headed N, 33-18
1455					" " 7 more N 123-29
1500					" " 12 more N 31
1507					" " 2 " 32
1552	WRSP	1	W		Critter: something big, gumpy, and alive underwater.
1620	GWG				1 imm Follow
1645	HG				4 ads.
<del>1655</del>					
1740	WRSP	1	⊙		
1755					whale - distinct dorsal fin  , ca. 20' long.
<del>1810</del>					Maybe pilot or something else. Slow roll, no spout?
					<del>33-17 124-05</del> Baird's Beaked Whale?
1825	BFA	1			
	GWG	1			
	HG	2			
	Laysan Albatross	2			
1825					Sunset close observations



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

SPECIMEN  
or

# Noct. GRID

OBSERVERS:

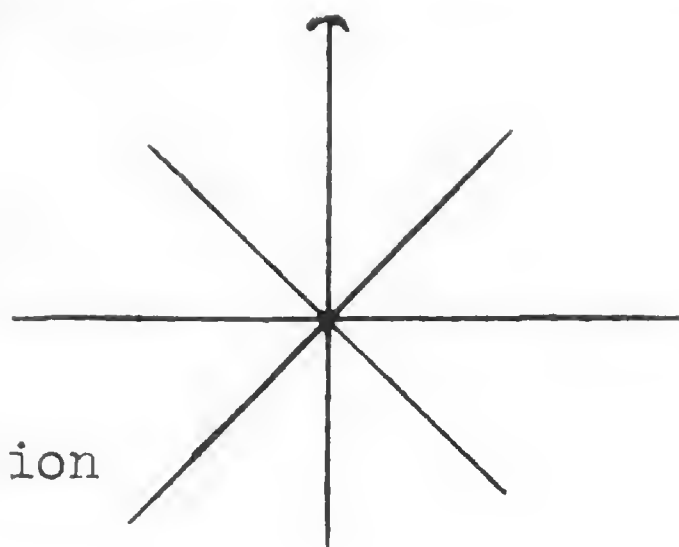
Date 18-19 Mar '67  
Pg. #           

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2020					
2125	Bird	1			begin observations,
2220					close

SI-MNH-958-e  
 Rev. 5-66



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

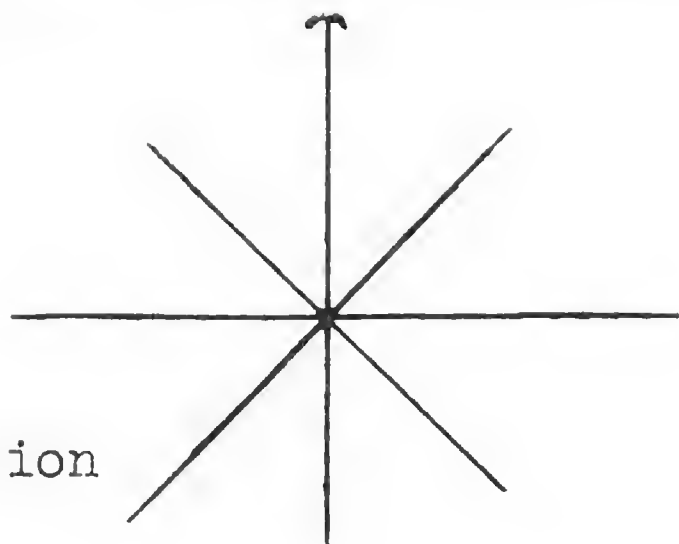
Date 19 March 67  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0630					Sunrise begin observations
0649	BFA	1			Following
<del>0700</del>					<del>to 1000</del>
0800	WRSP	1	3		
0811	"	1	3		
0835	"	2	3		
0840	BFA				now 2
0900 - 0940					maneuvering
0940	BFA				now 4
0940	st. pet	1	3		
0946	WRSP	1	3		
0955	"	1	3		
1008	"	1	3		
1020	WRSP	1	3		stop ship
1030					skiff over
1030					
1047	Red Phal	1	N		underway - slowly
C 1055	R. "	1			coll skiff DLB
C 1102	WRSP	<del>10</del>			1 coll skiff DLB - probably feeding or searching
1102					Porpoise 5 - 32-35 126-03
C 1116	Leach's	1			coll.
1130	RH				
					Pilot whale 13 32-35 125-59
					Porpoise 9 - Bottle-nosed Dolphin 32-35 125-59
1140	Storm P.	1	⊙		
1145					return skiff to ship
1315					
1320	WRSP	1	0		Seal 32-35 125-43
1325	"	1	ce		
1333	"	2	ce		
C 1334	Leaches	1	ce		BAH coll.
C 1342	"	1	ce		BAH coll.
1351	Leaches	8	ce		1 coll BAH
1400	WRSP	1	0		
1404	R. Phal	1			on H <sub>2</sub> O
1405	"	40	3		3 collected BAH

Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

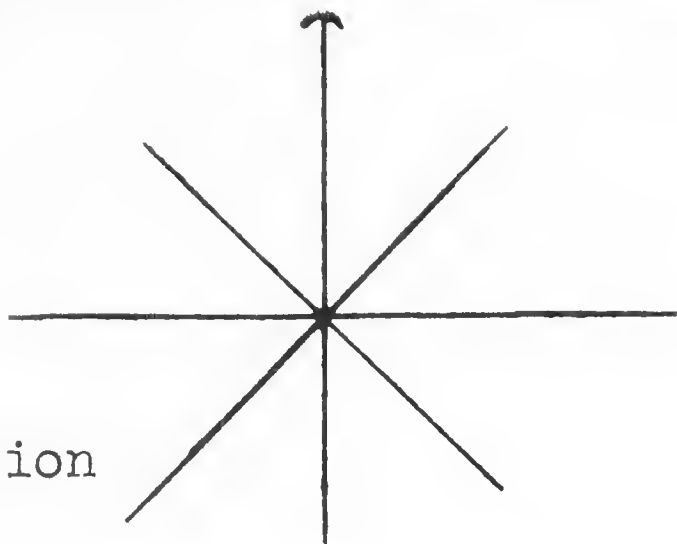
Date 19 March 67  
Pg. # 2

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

1408	R. Phal	6	2		White-winged Petrel 2
1410	"	3	3		
1414	"	3	3		2 collected BAH
1416	"	3	3		
1422	"	1	2		coll: BAH
1424	"	1	2		"
1434	"	9	2		stuff aboard
1440					
1450	WRSP	1		on H <sub>2</sub> O	
1458	R. Phal	12	3		
1502	WRSP	1	3		
1517	"	2	3		
1550	"	1	3		
1554	"	1	3		
1605	"	1	3		
1605	"	1	3		
1610	curlew	2	1630		pod about 25 32-35-125-10
1635	WRSP	1	2		~15 Pilot Whales ~5 Risso's dolphin ~5 Bottle nose " } well-observed for 15 min.
1708	R. Phalarope	11	NE		
1714	"	29	4		flying up off H <sub>2</sub> O climbing to about 100' then gliding all spread out down to about 10' then repeated.
1720	WRSP	1	4		
1728	"	1	NE		
1741	"	1	N		
1803	Storm Pet.	1	4		
1820	WRSP	1	4		
1827	R. Phalarope	25 ± 3	4		on H <sub>2</sub> O
1830					Sunset close observation





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

SPECIMEN

or

OBSERVERS:

Date 19-20 March 67  
Pg.# 1

TIME SPECIES # DIR. BAND NO. REMARKS

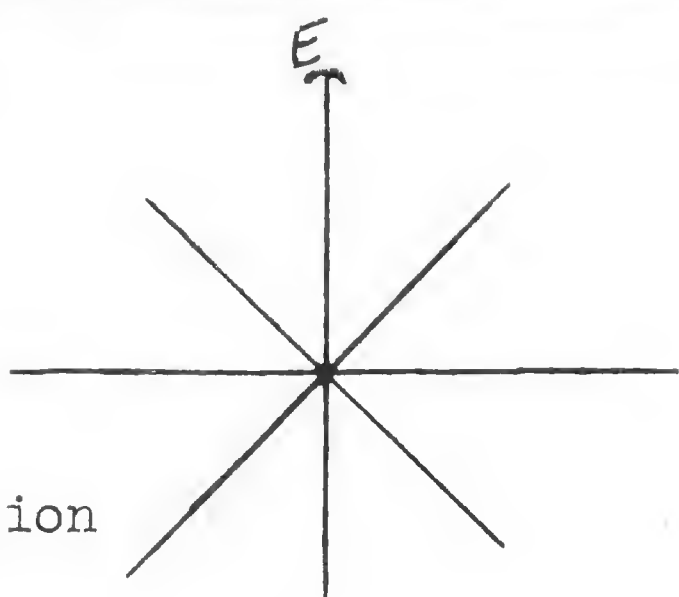
2030

Began Observations

2230

Close 11

Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

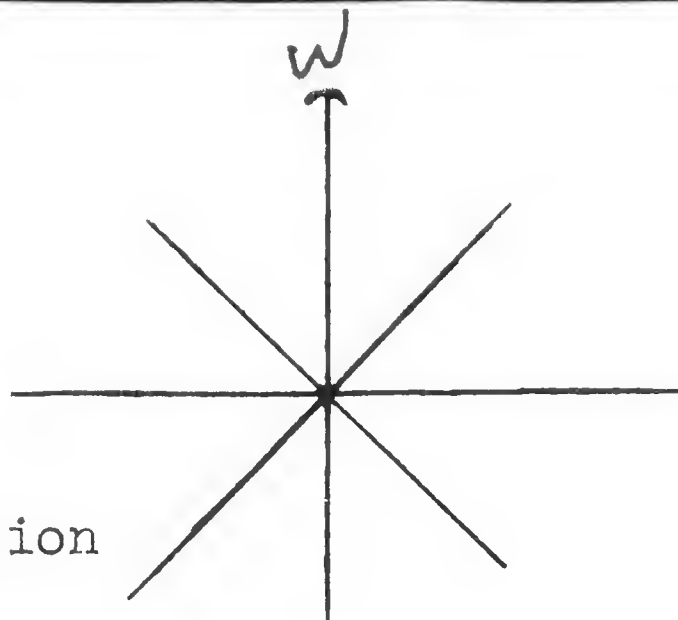
Date 20 ~~19~~ MARCH 1967  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0614					SUNRISE
0615					Begin observations
0655	HG	2	00		adult.
0658	HG				Now 4 ad.
0700					swarms of small man-o-war type jellyfish all over. about one/sq. 2 feet.
0730					seal - looked <sup>too big for</sup> <del>like</del> a fur seal; sealion sp?
0745	R. Phalarope	4			ON H <sub>2</sub> O
0745	BFA	1			following.
0815	WRSP	1	0		
0915	"	6	00		
0920	"	1	00		
0920	R. Phal.	3	00		
0924	"	1	00		
0941	Storm Pet	3	00		
0954	WRSP	1	00		
1029	R. Phalarope	2	NE		
1120	HG	1	0		coll: DLB
1120	BFA				now 2 follow
1145	R. Phal	21			on H <sub>2</sub> O - flew E
1146	"	16	E		
1151	WRSP	2	0		
1215					Sealion 1 32-18 121-05
1230					C & T to South
1245					Elephant Seal observed cloudy white
1256	B. Phalarope	4	00		Stopped for BT up high 200 ft. (32-11 121-02)
1345					Sea Lion, 2 headed M. One had prominent forehead while other did not. both had visible ears. - 31-59
1442	WRSP	1	0		
1503	Shear/Pet	1	0		
1510	St. pet	2	0		light brown - possibly a fulmar, but didn't fly so
1512	WRSP	2	0		didn't see white rumps
1523	"	1	0		
1530	"	1	0		
1622	R. Phal.	1	0		
1640	"	1	00		
1648	"	4	00		up high
1651	"	65+10	00		
1655	"	3	W		high





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

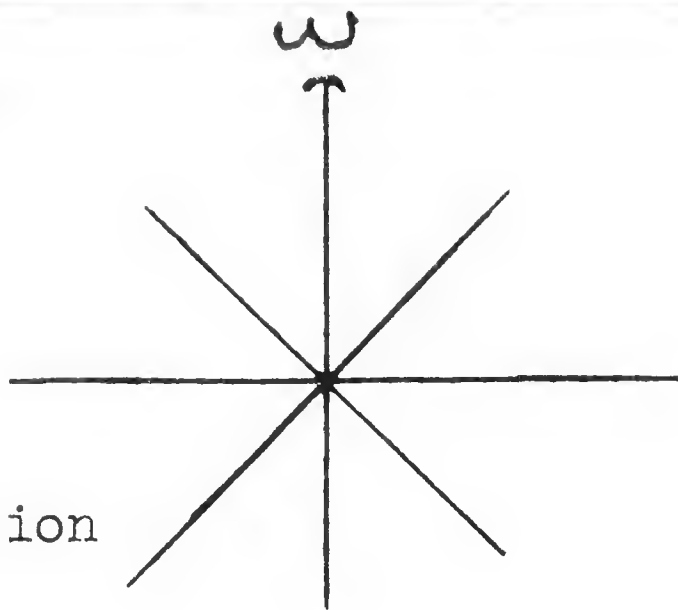
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\_\_\_\_\_

Date 20 March '67  
Pg.# 2

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

1725					porpoise 2 - 31-44 121-20
1730	BFA	2			Following
1735	WRSP	1	<del>000</del>		NO GULLS
1745	"	1	N		
1817					SUNSET: CLOSE OBSERVATIONS



Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

SPECIMEN  
or

NOCTURNAL

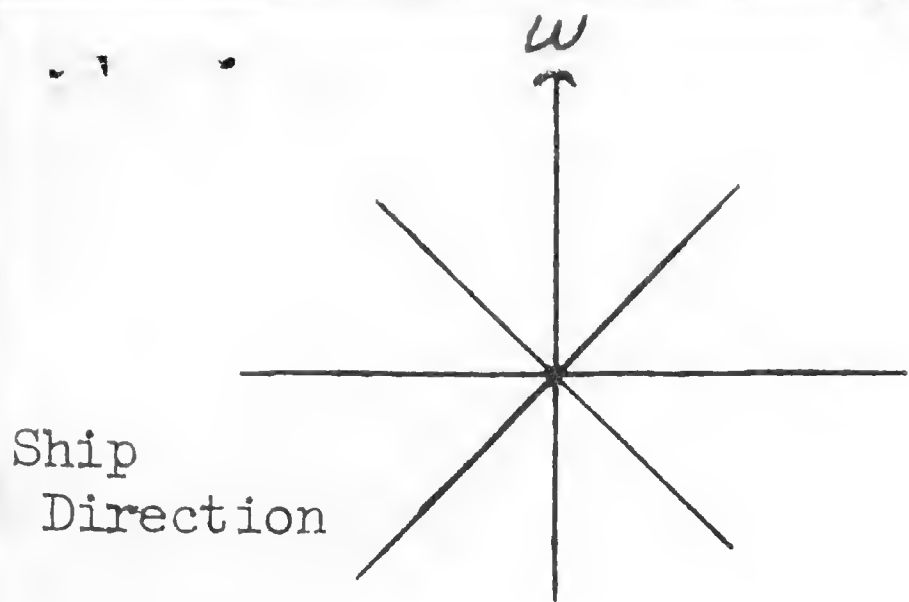
Date 20 March 67  
Pg.# \_\_\_\_\_

TIME SPECIES # DIR. BAND NO. REMARKS

2030					Begin obs.
2050	"Little white one"			1	seen by Capt'n
2140	"			1	seen by Davie
2230					seen by

} R. Phal. ?





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

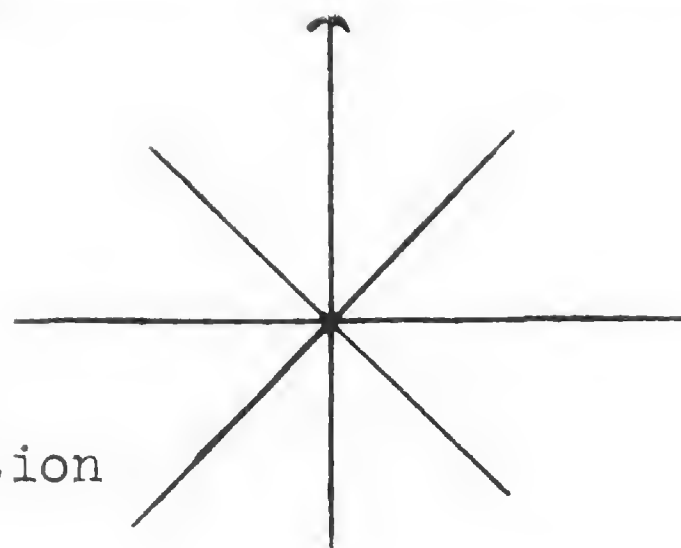
OBSERVERS:

Date 21 March 1967  
Pg.# 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0630					Begin obs.
0715	R. Phal	1	N		
0735	WRSP	1	⊙		
0842	"	1	⊙		
1008	BFA	1	Follow		behaved diff. from Baird's - smaller in size - fully cleared H <sub>2</sub> O though same type coloration
1026	WRSP	1	B		
1115	"	1	⊙		
1115					Pacific Striped or Baird's Dolphin ca 15
1151	WRSP	2	⊙		It may have been a Mixed group
1155	WRSP	1	⊙		42-2 31-42 12450
1216	"	1	⊙		
1222					Striped Dolphin 12, Baird's 2
1250					31-44 25-03
1308	R. Phal	1	on H <sub>2</sub> O		skiff in water
1337	"	3	on H <sub>2</sub> O		
1406	Storm Pet	1	⊙		
1408	Leach's	1			coll TJL
1425	R. Phal	1	NW		
1430	Birds	4			
1500					skiff aboard
1635					Pilot whales ca. 25 <sup>±10</sup> - 31-43
1700	BFA	1			wide spread 125-43
1707	Laysan A	1	⊙		Following
1730					porpoise - 12 Stenella sp? A small porpoise; Don't think Baird's or Striped. Jumped differently - Out of water by > 1 foot, shorter distance than Baird or Str. - 31-42
1805					Baird / Spinner type - as seen at 1115 + 1730
					20t going N 31-41 126-00
1830					close observation.
6900	Archeopteryx lithographica				flock of 3000
02	Hesperornis sp.	3	- on H <sub>2</sub> O		in breed. plum.
					chasing school of
					Latimerians



Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

SPECIMEN  
or

Nocturnal bird

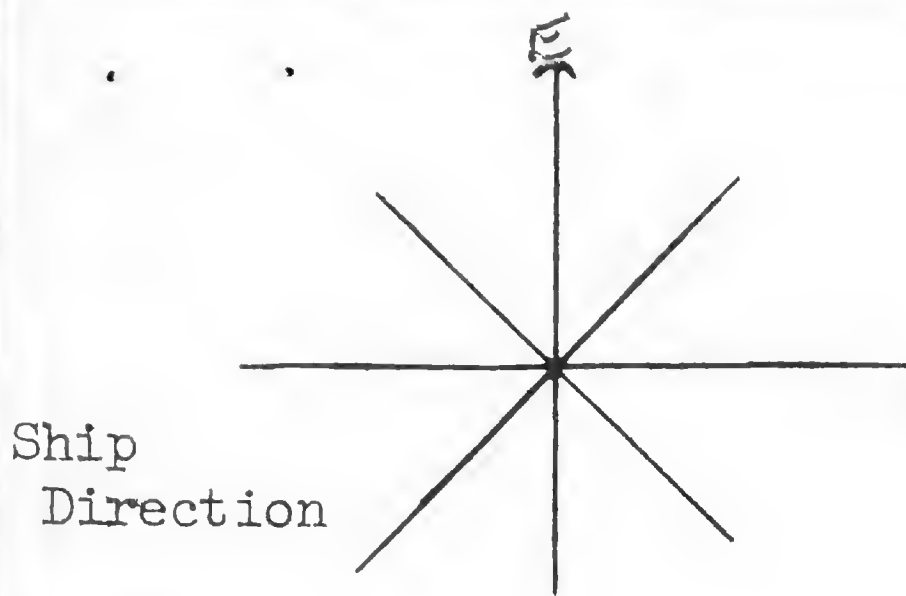
OBSERVERS:

Date 21-22 May '67  
Pg. # 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2030					<p>begin observations</p> <p>Many schools of small fish ca 2" long. One school of 6-10" fish seen jumping, showed on radar</p> <p>We have noted blips on radar tonight that are either jumping fish or porpoise: their speed figured at up to 15 knots. Not birds 'cause disappear from screen occasionally, then reappear.</p> <p>What?</p> <p>We have also sighted many school fish.</p>
	No birds				
2230					CLOSE.

SI-MNH-958-6  
 Rev. 5-66





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 22 March 67  
Pg.# 1

SPECIMEN  
or

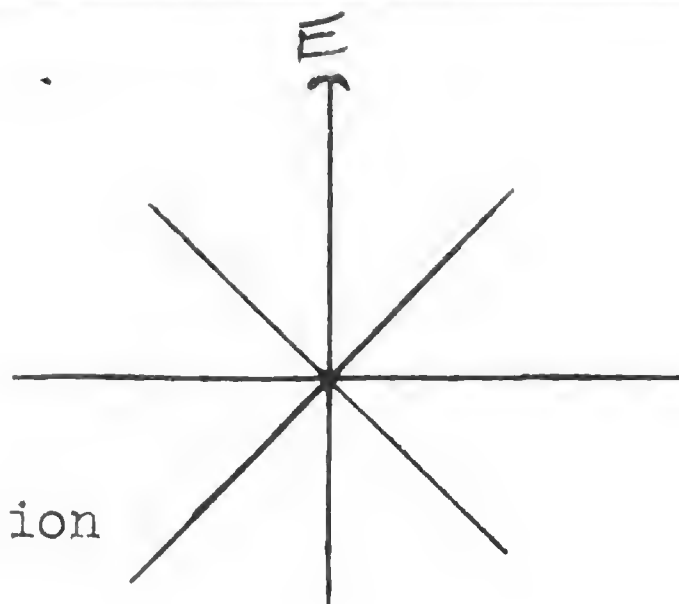
TIME SPECIES # DIR. BAND NO. REMARKS

0624					sunrise begin observation: Heavy cloud, numerous rain squall.
0624	BFA	1			Following
0632	WRSP	1	W		
0650	R. Phal.	1	W		
0651	WRSP	2	W		on H <sub>2</sub> O
0657	"	1	W		
0707	R. Phal	1	NE		
0747	WRSP	1	W		
0752	<del>WRSP</del> Leach's	1			black dividing line on rump seen.
0802	WRSP	1	W		Almost NO white on rump.
0820					Sperm whale 5
0830	Storm Pet.	1	W		30-49 124-03
0842	WRSP	1	E		
0918	St. pet	1	W		
0920	WRSP	1	W		
0923	St. pet.	1	W		
0927	"	1	W		
0930	"	1	W		
0931	BFA	1			Follow.
0940	R. Phal.	1	W		
0952	WRSP	1	W		
0958	"	1	W		
1102	R. Phal	1	SW		
1120	BFA				1 followed briefly.
1205	St. pet	1	W		
1208	R. Phal	1	E		
1215	WRSP	1	W		
1235	"	1	W		
1238	Pterodroma sp	1	W		white underneath wings - white winged?
1240	R. Phal.	1	W		
1310	Sooty Tern	1	NE		Dark under wings

west sect

east sect.

Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

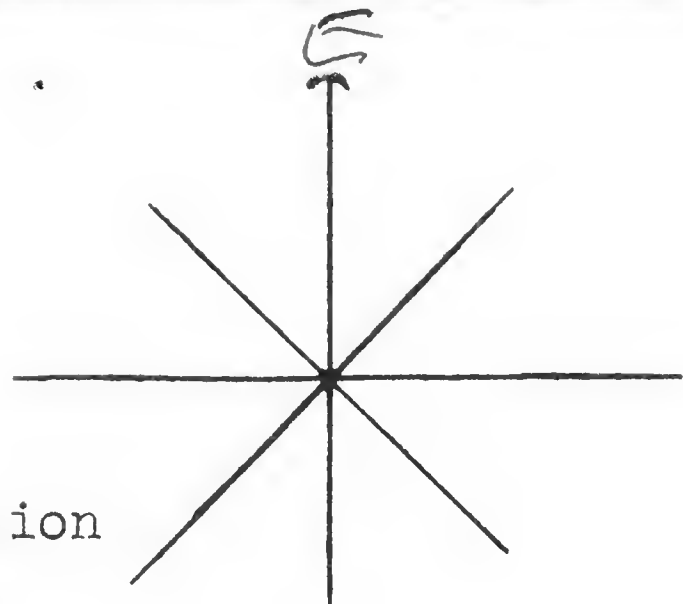
Date 22 March 67  
Pg. # 2

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

1330	WRSP	1	ce		
1337	Gull sp	1	N		
1344	WRSP	1	ce		
1347	Shear/Pet	1	E		
	WRSP	1	ce		Small white wing linings otherwise dark
1410	"	1	ce		very flapping flight like shearwater about 30' off
1416	"	1	ce		water.
1437	BFA	1	ce		over small natural oil slick.
1447	Storm Pet	1	ce		on H2O 1 mile from ship. Flushed & flew away.
1450	WRSP	1	ce		distant.
1450					Porpoise 4 30-51 122-50
1525	WRSP	1	ce		
1615	Storm Pet	1	NE		couldn't see through fog
1620	WRSP	2	ce		
1626	"	1	ce		
1635	"	2	ce		
1640	"	1	ce		
1645	"	1	ce		
1700					Risso's Dolphin? 5 } photo's taken (BAH)
1728	R.P.	1			Bottle-nosed " 3 } together.
1732	R.P.	2	W		on H2O
1733	"	1	W		
1756	RP	4	N		
1758	WRSP	1	NE		
59	"	1	ce		
1759	R.P.	1	N		
1800	WRSP	2	ce		
1805	St. pet	1	ce		
1815	WRSP	1	ce		
1825					cease obs.





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date 22 March 1967  
Pg. # \_\_\_\_\_

SPECIMEN  
or

*Nocturnal*

TIME SPECIES # DIR. BAND NO. REMARKS

2000

*begin obs.*

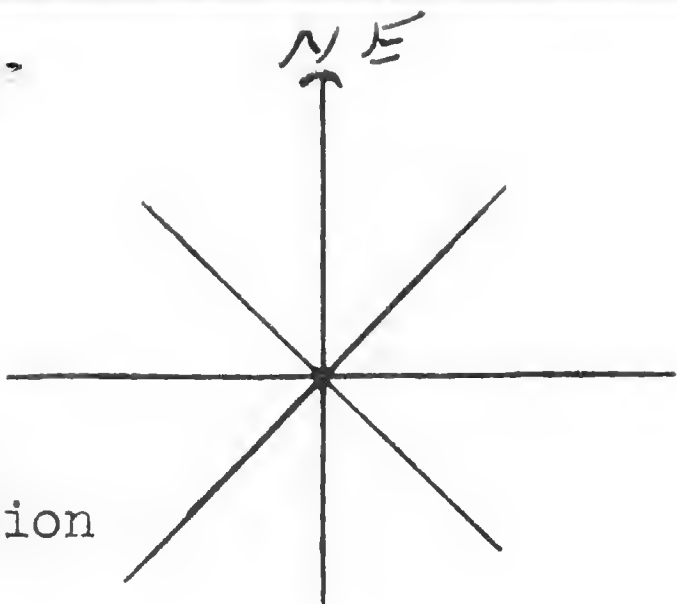
2135

*Gull*

*1+*

2200

*close obs.*



Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

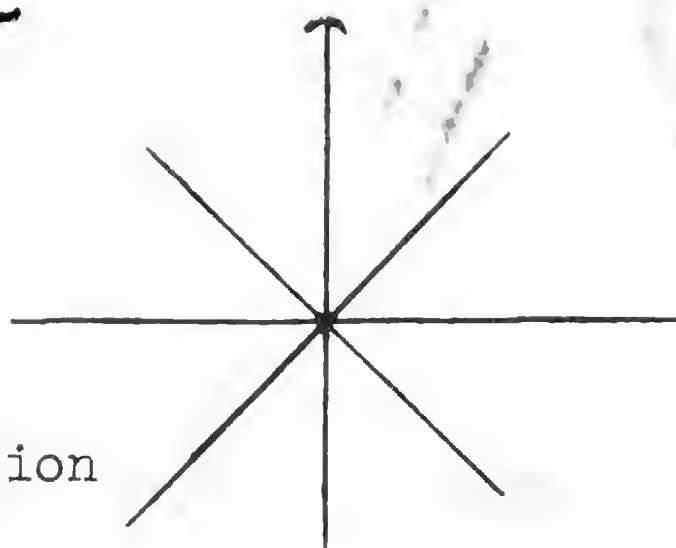
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\_\_\_\_\_

SPECIMEN *None and*  
or

Date *23 Mar '67*  
Pg.# *1*

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
<del>0555</del>					<i>begin</i>
<del>0557</del>					<i>striped porpoise 5</i>
0601					<i>Sunrise</i>
0620	BFA	1	⊙		<i>following</i>
0640	Fulmar	1	N		<i>dark</i>
0747	HG	1	⊙		<i>Ad following</i>
0800	Ful.	1	E		<i>plc.</i>
0805	R. Phal	2			<i>on H<sub>2</sub>O - E</i>
0807	"	2			<i>on H<sub>2</sub>O</i>
0830					<i>on H<sub>2</sub>O</i>
0835	R. Phal.	1			<i>6 Striped dolphins 31-57 119-49</i>
0855					<i>32-81 119-47</i>
0925	R. Phal	3	E		<i>3 Pacific Right Whale dolphins - rode bow wake for 20 min. - WELL SEEN est. length 6'-7' photographed BAH</i>
0940					<i>6 Striped dolphin - 32-04 119-41</i>
0940	R. Phal	1	E		
1040	"	2	ce		
1051	"	1	ce		
1117					<i>1 Seal - 32-15 119-29</i>
1135	BFA	1	B		
1136	Pom J.	1	E		<i>light</i>
1137	Ful.	1	B		<i>dk</i>
1150					<i>1 Striped dolphin - 32-21 119-26</i>
1210	W. Gull	1	N		<i>imm.</i>
1220	Sabine's Gull	1	NW		<i>ad., well seen</i>
1234	soot/slender	1	N		
1237	Alcid	1	N		
1259	Pom J.	1	ce		<i>Sitting on H<sub>2</sub>O Ad Int.</i>
1309					<i>Seal 1 - 32-27 119-10</i>
1315	Gulls	2	ce		<i>Followed momentarily 1 Ad 1 Imm</i>
1325	R. Anct Phal	1	ce		<i>on H<sub>2</sub>O</i>
1345					<i>skiff over, set slick</i>
1400	W Gull	2			<i>1 coll DLB sub ad.</i>
1401	H G	1	⊙		
1405	W Gulls	2			<i>over slick - imm.</i>
1415	Pom J.	1	ce		<i>light</i>
1440					<i>skiff aboard</i>





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SPECIMEN  
or

Date \_\_\_\_\_  
Pg. # \_\_\_\_\_

TIME SPECIES # DIR. BAND NO. REMARKS

1455					Seal 32-34 119-01
1457	BLIS	<del>1</del> 1			Ad on slick coll: BAH
1542	Gulls	3			2 Im 1 Ad
1600	H. Puffins	2			on H <sub>2</sub> O
1615	Fulmar	2			on H <sub>2</sub> O
1616	R. Auklet	2			1 coll: TTL
1623	Gull sp.	1	8		
1634	W. Gull	2	W		ads.
1637	HG	1	E		ad
1642	Rhino	2	on H <sub>2</sub> O		
1703	W Gull	5			3 ad, 2 imm
1703	Pom T	1	⊙		
1703					sea lion 32-41 118-57
1707	W. Gull	2	N		ad
1710	R. Phal	1			on H <sub>2</sub> O - quite a bit of red.
1720	RA	2			on H <sub>2</sub> O
1730	W. Gull	4	8		3 ad, 1 imm
1740	RA	2	on H <sub>2</sub> O		
1745	Gulls	2	8		
1755	W. Gull	1	⊙	Imm	
1805	"	2	⊙	ad.	leave doc.
1810					

12 March

S

T

BFA	10	-	6	-
H6	29	-	25	-
G-W Gull	1	-	2	-
BLK	9	-	9	-
Fulmar	1	-	4	-
WRSP	1	-	1	-
Shear/Pet			1	-
Pom Jaeger			2	-
Alcedo sp			3	-
BA			1	-



13 March

	S		R
BFA	6	-	11
H Gall	4	-	21
BLK	1	-	9
Longtailed Jaeger	1	-	
WRSP			1
FTP			2
ST Pet			2
Pterodroma			4
Alcid sp			1

14 Nov 67

	S	T
BFA	3 -	12 -
HG	16 -	51 -
G-W Gull	-	1 -
Fulmar	-	4 -
WRSP	19 -	6 -
Sooty Shear	-	1 -
Juan sp	-	1 -
BLK	1 -	-
Alcid sp	4 -	1 -
RA	3 -	-
H. Puffin	1 -	-



12 Mando

	#V	W	
BFA	2	5	-
LA	2	1	-
H Gell	4	8	-
G-W Gell	1	1	-
WRSP	5	<del>4</del>	-
ST Pet		1	-
R Phil	2		

20 March

	<u>W</u>	<u>Z</u>
BFA	2	2
Shore Pet	—	1
WRSP	11	7
St Pet	3	2
R Phul	51	74
H Gull	4	—



21 March

	X	Y
BFA	1	1
LA	1	.
WBSP	5	4
St Pet	1	—
R Phil	5	1
Bud SP	4	—

22 March

	Y		Z
BFA	1	/	—
Shear/Pet	1	/	—
WRSP	20	/	12
St Pet	7	/	2
Pterodroma	1	/	—
R Phul	6	/	9
S/s/b	1	/	—
Gold SP	1	/	—